PB87-198735

Criteria Pollutant Emission Factors for the 1985 NAPAP (National Acid Precipitation Assessment Program) Emissions Inventory

Radian Corp., Research Triangle Park, NC

Prepared for

Environmental Protection Agency
Research Triangle Park, NC

May 87

U.S. Department of Commerce
National Technical Information Service
NTIS

PB87-198735

EPA/600/7-87/015
May 1987

CRITERIA POLLUTANT EMISSION FACTORS FOR THE 1985 NAPAP EMISSIONS INVENTORY

By

Margie B. Stockton
John H. E. Stelling
Radian Corporation
Post Office Box 13000
Research Triangle Park, North Carolina 27709

EPA Contract No. 68-02-3994
Work Assignment No. 83

Project Officer
J. David Mobley
Air and Energy Engineering Research Laboratory
U. S. Environmental Protection Agency
Research Triangle Park, North Carolina 27711

This project was conducted
in association with the
National Acid Precipitation Assessment Program

AIR AND ENERGY ENGINEERING RESEARCH LABORATORY
OFFICE OF RESEARCH AND DEVELOPMENT
U.S. ENVIRONMENTAL PROTECTION AGENCY
RESEARCH TRIANGLE PARK, NC 27711

REPRODUCED BY
U.S. DEPARTMENT OF COMMERCE
NATIONAL TECHNICAL
INFORMATION SERVICE
SPRINGFIELD, VA 22161

TECHNICAL REPORT DATA
(Please read Instructions on the reverse before completing)

1. REPORT NO.
EPA/600/7-87/015

2.

3. RECIPIENT'S ACCESSION NO.
PB87 198735/AS

4. TITLE AND SUBTITLE
Criteria Pollutant Emission Factors for the 1985 NAPAP Emissions Inventory

5. REPORT DATE
May 1987

6. PERFORMING ORGANIZATION CODE

7. AUTHOR(S)
Margie B. Stockton and John H. E. Stelling

8. PERFORMING ORGANIZATION REPORT NO.

9. PERFORMING ORGANIZATION NAME AND ADDRESS
Radian Corporation
P. O. Box 13000
Research Triangle Park, North Carolina 27709

10. PROGRAM ELEMENT NO.

11. CONTRACT/GRANT NO.
68-02-3994, Task 83

12. SPONSORING AGENCY NAME AND ADDRESS
EPA, Office of Research and Development
Air and Energy Engineering Research Laboratory
Research Triangle Park, NC 27711

13. TYPE OF REPORT AND PERIOD COVERED
Task Final; 10/86 - 5/87

14. SPONSORING AGENCY CODE
EPA/600/13

15. SUPPLEMENTARY NOTES AEERL project officer is J. David Mobley, Mail Drop 62, 919/541-2612.

16. ABSTRACT The report provides emission factor estimates for volatile organic compounds (VOCs), nitrogen oxides (NOx), and sulfur oxides (SOx) which were developed from a variety of readily available information. As part of the National Acid Precipitation Assessment Program (NAPAP), the EPA identified the need to generate emission factors for VOCs for about 1,800 source classification categories (SCCs). Additionally, emission factor development was needed for NOx, SOx, and VOCs for SCCs that states have used to report emissions. Each SCC represents a process or function that is logically associated with a point source of air pollution. The objective of this effort was to estimate VOC emission factors for all SCCs where VOC factors were previously absent, and to develop NOx and SOx emission factors for SCCs that states had reported as emission sources. Emission factors for particulate matter (PM) and carbon monoxide (CO) from AP-42 Fourth Edition and Supplement A are also provided. Data gathered during numerous standards-setting activities as well as those from state emissions inventory data bases were used to estimate the new emission factors. Transfer of emission factors for similar processes in different industries provided emission factor estimates for source categories where no data were available.

17. KEY WORDS AND DOCUMENT ANALYSIS

a. DESCRIPTORS		b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group	
Pollution	Assessments	Pollution Control	13B	14B
Emission	Organic Compounds	Stationary Sources	14G	
Inventories	Volatility	Criteria Pollutants	15E	20M
Precipitation	Nitrogen Oxides	Emission Factors		
(Meteorology)	Sulfur Oxides	Acid Rain	04B	
Acidification	Particulate	Particulate	07B, 07C	
	Carbon Monoxide			

18. DISTRIBUTION STATEMENT
Release to Public

19. SECURITY CLASS *(This Report)*
Unclassified

20. SECURITY CLASS *(This page)*
Unclassified

21. NO. OF PAGES
228

22. PRICE

NOTICE

This document has been reviewed in accordance with U.S. Environmental Protection Agency policy and approved for publication. Mention of trade names or commercial products does not constitute endorsement or recommendation for use.

FOREWORD

This report describes the development of emission factors for volatile organic compounds (VOC's), nitrogen oxides (NO_x), and sulfur oxides (SO_x) emissions for a number of source classification categories (SCC's). An emission factor listing for five criteria pollutants (particulate matter, nitrogen oxide, sulfur oxide, volatile organic compounds, and carbon monoxide) is included. All emission factors reported in AP-42 through the Fourth Edition (September 1985) and Supplement A to AP-42 (December 1986) are presented in table format. Additionally, emission factor estimates for VOC, NO_x, and SO_x that were developed during the current work are presented. The project was administered by the U. S. Environmental Protection Agency (EPA) with funding from the National Acid Precipitation Assessment Program (NAPAP) Task Group on Emissions and Controls. David J. Beecy of the U. S. Department of Energy serves as chairman of this task group. The EPA Project Officer was J. David Mobley. The project has been a cooperative effort with assistance from EPA's Air and Energy Engineering Research Laboratory (AEERL) and Emerico L. Martinez, William H. Lamason, Arch A. MacQueen, E. Susan Kimbrough, and Charles O. Mann of the EPA's Office of Air Quality Planning and Standards (OAQPS).

ABSTRACT

As part of the National Acid Precipitation Assessment Program (NAPAP), the U. S. Environmental Protection Agency (EPA) identified the need to generate emission factors for volatile organic compound (VOC) emissions for approximately 1,800 source classification categories (SCC's). Additionally, emission factor development was needed for nitrogen oxides (NO_x), sulfur oxides (SO_x), and volatile organic compounds (VOC's) for specific SCC's that States have used to report emissions. Each SCC represents a specific process or function that is logically associated with a point source of air pollution. The objective of this effort was to estimate VOC emission factors for all SCC's where VOC factors were previously absent, and to develop NO_x and SO_x emission factors for those SCC's that States had specifically reported as emission sources. This report includes emission factor estimates for VOC, NO_x, and SO_x which were developed from a variety of readily available information. Emission factors for particulate matter (PM) and carbon monoxide (CO) from AP-42 Fourth Edition and Supplement A of AP-42 are also presented. Data gathered during numerous standards-setting activities as well as data provided from State emissions inventory data bases were used to calculate the new emission factor estimates. Technology transfer of emission factors for similar processes in different industries was used to provide emission factor estimates for source categories where no data were available. A listing of all valid SCC's used in the 1985 NAPAP Emission Inventory, as well as approximately 90 SCC's which have been added to the inventory since October 1985, is included along with all emission factor estimates developed through April 1987.

CONTENTS

Page

Foreword. iii
Abstract. iv
List of Tables. vii
Executive Summary viii
Abbreviations and Symbols xiii
Conversion Factors xv

1. Introduction 1
2. NEDS SCC'S and Emission Factor Listing 3
3. State Submittals to NEDS Which Required Development of Emission Factors. 5
4. Sources of Information 7
5. Changes to NEDS Listing. 18
6. Quality of New Emission Factor Estimates 19
7. Emissions Calculation Procedures 20
8. Recommendations for Further Study. 23
9. Source Classification Codes and Emission Factors 27
    External Combustion Boilers 29
        Electric Generation. 29
        Industrial 30
        Commercial/Institutional 33
    Manufacturing Industries. 36
        Chemical Manufacturing 36
        Food and Agriculture 63
        Primary Metal Production 63
        Secondary Metal Production 77
        Mineral Products 84
        Petroleum Industry 97
        Pulp and Paper Industry. 99
        Rubber and Miscellaneous Plastics Products 103
        Fabricated Metal Products. 104
        Oil and Gas Production 106
        Textile Products 109
        Printing and Publishing - Typesetting. 110
        Miscellaneous Manufacturing Industries 111
    Organic Solvent/Petroleum Product Evaporation 112
        Dry Cleaning/Degreasing. 112
        Surface Coating Operations 114
        Petroleum Product Storage/Refineries, Oil and Gas Fields Only 122
        Bulk Terminals/Plants - Petroleum Storage Tanks 125
        Printing/Publishing - Printing Processes 128

CONTENTS (Continued)

Page

Transportation and Marketing of Petroleum Products. 129
Organic Chemical Storage 131
Organic Chemical Transportation. 143
Organic Solvent Evaporation - Miscellaneous. 143

Solid Waste Disposal. 145
Government 145
Commercial/Institutional 145
Industrial 146

Appendices

A. Notes to the Table. 149
B. Footnotes from Original NEDS Document 189
C. Summary of State Requests for Emission Factor Development. 193
D. Estimating Fugitive Emissions of VOC From Chemical Units. 203
E. Changes to the SCC Listing Since October 1985 207

LIST OF TABLES

Table Page

1 Summary of Emission Factor Development x

2 Summary of Emissions Data Provided by States 9

C-1 Emission Factor Development from State Quick Look Reports 194

C-2 SCC's from Quick Look Reports for Which Emission Factor Development was not Appropriate. 198

D-1 Example of Emissions Estimate Using the AID Approach . . . 205

E-1 Changes to the SCC Listing Since the 1985 NEDS Report. . . 208

EXECUTIVE SUMMARY

As part of the National Acid Precipitation Assessment Program (NAPAP), the Air and Energy Engineering Research Laboratory (AEERL) of the U. S. Environmental Protection Agency (EPA) updated the October 1985 NEDS Source Classification Codes and Emission Factor Listing that was prepared by EPA's Office of Air Quality Planning and Standards (OAQPS). In Phase I of the update (EPA-600/7-86-052, December 1986), volatile organic compound (VOC) emission factor estimates were generated for those source classification categories (SCC's) where substantial amounts of VOC emissions were expected. The major emphasis of that effort was on organic chemical manufacturing processes and storage of petroleum products and organic chemicals. This report describes the second phase of the update which consisted of developing VOC emission factor estimates for all remaining SCC's. Additionally, State Air Offices have submitted reports to NEDS on emissions from point sources within their States. The SCC's appearing in these reports which previously lacked emission factors were targeted as high priority SCC's for the development of volatile organic compound (VOC), nitrogen oxide (NO_x) and sulfur oxide (SO_x) emission factors.

The SCC's and emission factors that are reported in OAQPS's 1985 NEDS report resulted from updating all emission factor changes through AP-42, Fourth Edition. During this effort, the SCC listing was revised to incorporate all changes through Appendix A to AP-42 (October 1986). This report also contains a number of new SCC's and changes to existing SCC's that have been previously listed. A complete listing of all SCC's and emission factors published in the 1985 NEDS document, as well as the emission factor estimates developed during Phase I and Phase II of the update are included in this report.

In the current work by AEERL, the primary objective was to provide VOC emission factor estimates for all SCC's that had no current listing of VOC emission factors. Also included in this work was the development of NO_x and SO_x emission factor estimates for SCC's which were included in reports submitted by States that previously lacked these factors. The new emission factor estimates resulting from this current work are not of the same known quality as emission factors tabulated in AP-42. They represent best estimates which have not been subjected to rigorous quality assurance. These factors were generated from estimates taken from the literature, from averaging of data submitted by 13 State air quality offices, and through technology transfer of emission factors for SCC's from similar industries. Extensive notes and references are supplied in an appendix explaining how the new emission factor estimates were generated. In some cases, these notes give an indication of data quality by reporting the number of emission tests used to develop a factor.

State Contacts

Thirteen States were contacted to obtain emissions data from emission inventories, test reports, and permit files. States which have large industrial sectors and potentially large emission sources were specifically targeted during this effort. Emissions data were supplied by 12 of the States, seven through computerized emissions inventories and five through review of permit files. Emission factor estimates were generated by averaging the emission data submitted for each SCC. In some cases, States or industries were recontacted to provide more complete process descriptions and production rates. States provided a substantial amount of emissions data on metal operations (both primary and secondary) and on mineral products operations.

Literature Review

A number of source specific documents, including Background Information Documents (BIDs), Industrial Process Profiles, Source Assessments, and chemical specific emission source survey documents were reviewed to gather information on emissions and processes. These documents provided useful information on process descriptions, operating parameters, raw materials, and end products for many source categories. This information was used to compare similar processes in different industries in order to apply technology transfer of emission factors across industries where appropriate. The Industrial Process Profiles, although somewhat outdated (published in 1977 and 1980), proved especially useful for this exercise.

State Reports Requiring Emission Factor Calculations

In 1985, EPA asked States to submit emissions data for large sources of criteria pollutants. Emphasis was placed on SO_x, NO_x, and VOC emissions from sources emitting over 100 tons/year. Source test emissions data have been submitted, as well as emission estimates based on AP-42 emission factors or engineering judgement. Where no emission factors were available, States have requested that emissions be calculated for them by the National Emissions Data System (NEDS). NEDS calculates emissions by using emission factors already in the system for an SCC. Where no emission factors have ever been reported, the SCC's were flagged for emission factor development as a high priority for this work assignment.

Results

At the completion of the Phase II effort, 99 percent (2725) of the SCC's have VOC emission factors or emission factor estimates associated with them or do not need emission factors due to their general description. Of these, 37 percent (1006) were developed during this effort. Emission factors for NO_x and SO_x are included for 75 percent of the SCC's in the listing. Table 1 summarizes the emission factor development for the SCC's currently contained in NEDS and shows a breakdown of progress by major source category. During this effort, over 100 VOC emission factors were developed in each of the following major source categories: chemical manufacturing, primary metals operations, and secondary metals operations.

Forty-six States sent in reports on emissions for SCC's in which emission factor development was necessary for NO_x, SO_x, and VOC. Emission factors for 293 different SCC's were included in these reports. Of the 293 SCC's for which factors were needed, 130 NO_x emission factors (98 percent of the NO_x requests) were developed, 128 SO_x emission factors

TABLE 1. SUMMARY OF EMISSION FACTOR DEVELOPMENT

Major Source Category	Total Number of SCC's in Category	Number of SCC's for Which Emission Factors are Inappropriate[a]	Total Number of SO_x Emission Factors[b] (% Completed)	Total Number of NO_x Emission Factors[b] (% Completed)	Total Number of VOC Emission Factors[b] (% Completed)
Combustion Sources	190	8	179 (98%)	177 (97%)	182 (100%)
Chemical Manufacturing	723	70	179 (34%)	192 (36%)	612 (94%)[c]
Inorganic Chemical Storage	28	6	15 (75%)	18 (86%)	26 (100%)
Food and Agriculture	151	22	102 (82%)	102 (82%)	129 (100%)
Primary Metals	223	13	142 (70%)	120 (60%)	210 (100%)
Secondary Metals	215	20	126 (68%)	131 (70%)	195 (100%)
Mineral Products	387	31	321 (91%)	328 (93%)	354 (100%)
Petroleum Operations	56	8	39 (84%)	39 (84%)	48 (100%)
Pulp and Paper	87	26	51 (89%)	52 (90%)	65 (100%)
Rubber and Plastics	38	7	6 (34%)	6 (34%)	31 (100%)
Fabricated Metals	52	19	24 (83%)	26 (86%)	35 (100%)
Oil and Gas Production	29	8	12 (69%)	11 (66%)	21 (100%)
Textiles	21	12	0 (0%)	0 (0%)	9 (100%)
Organic Solvent Evaporation	270	41	229 (100%)	229 (100%)	229 (100%)
Petroleum Storage	139	17	122 (100%)	122 (100%)	122 (100%)
Chemical Storage	289	52	237 (100%)	237 (100%)	237 (100%)
Solid Waste Disposal	62	4	45 (79%)	44 (77%)	58 (100%)
Other[d]	197	35	145 (91%)	142 (90%)	162 (100%)
TOTAL	3157	399	1974 (75%)	1976 (75%)	2725 (99%)

[a] These include the "General Processes" (-01) codes, the "Other/Not Classified" (-98, -99) codes, and "Specify in Comments" (-888) codes.

[b] These percentages include all SCC's for which emission factors have been developed and all SCC's for which emission factor development is not required (see note a).

[c] Emission factors for fugitives can not be developed until nationwide equipment counts become available for each chemical manufacturing industry.

[d] "Other" category includes numerous small categories such as building construction, electrical equipment, printing and publishing, and photographic equipment.

(99 percent of the SO_x requests) were developed, and 169 VOC emission factors (100 percent of the VOC requests) were developed. These emission factors are based on data supplied in published literature and technology transfer of existing emission factors from similar processes. Many of the State submittals were received late in the project, and emission factor development is on-going. Two States had not yet submitted emissions data to NEDS as of April 30, 1987. In its final form, this document will address all SCC's for which State reports on emissions require emission factor development.

Recommendations

Recommended activities for future study include the development of additional NO_x and SO_x emission factor estimates. The approach would be similar to that used for VOC's. Further review of data which have been collected from States and the literature may help generate additional NO_x and SO_x emission factor estimates. Source categories targeted are chemical manufacturing industries and primary and secondary metals industries.

The emission factors developed during this effort are considered of "E" quality by AP-42 standards primarily because they are of unknown or uncertain quality. In some cases, the factors may be of much higher quality; however, the data should be reviewed and verified before higher ratings are applied. Emissions testing is recommended for improving some of these "E" rated factors, with emphasis on testing of sources with large VOC emission factors. Identification of the SCC's for which testing is desirable should be included in future work.

Emission factor development needs for particulate matter (PM) and carbon monoxide (CO) should be identified to determine the amount of additional work necessary if filling of emission factor gaps for SCC's for these two pollutants is desired.

LIST OF ABBREVIATIONS AND SYMBOLS

ABBREVIATIONS

A	-- Ash content of fuel on a weight-by-percent basis
BBL	-- Barrels*
BOF	-- Basic Oxygen Furnace
CHP	-- Cumene Hydroperoxide
DCBz	-- Dichlorobenzene
DCB	-- Dichlorobutene
DCIPE	-- Dichloroisopropyl Ether
DCP	-- Dichloropropane
DIPB	-- Diisopropylbenzene
EAF	-- Electric Arc Furnace
H.S.S.	-- Horizontal Stud Soderberg
JP-4	-- Naphtha-Type Jet Fuel
LDV	-- Light-Duty Vehicle
LPG	-- Liquified Petroleum Gas
MBA-AP	-- Methyl Benzyl Alcohol-Acetophenone
MCB	-- Monochlorobenzene
MDI	-- Methylenebis(4-phenyl isocyanate)
MEK	-- Methyl Ethyl Ketone
MIBK	-- Methyl Isobutyl Ketone
MDV	-- Medium-Duty Vehicle
MMA	-- Methyl Methacrylate
MMBtu/Hr	-- Million British Thermal Units per Hour
NEG	-- Negligible emissions
PART	-- Particulate
PO	-- Propylene Oxide
RVP	-- Reid Vapor Pressure is the absolute pressure of gasoline at 100°F in psia as determined by ASTM Method D323-72.
S	-- Sulfur content of fuel on a weight-by-percent basis.
SCC	-- Source Classification Code

LIST OF ABBREVIATIONS AND SYMBOLS (Continued)

SCFM -- Standard Cubic Feet per Minute[*]
Sq. Ft. -- Square Feet[*]
TBA -- t-Butyl Alcohol
TDA -- Toluene Diamine
TDI -- Toluene Diisocyanate
VOC -- Volatile Organic Compound
V.S.S. -- Vertical Stud Soderberg
w/ -- with
w/o -- without

SYMBOLS

Ca -- Calcium
CO -- Carbon Monoxide
CO_2 -- Carbon Dioxide
FeSi -- Ferrosilicon
HCl -- Hydrochloric Acid
HCN -- Hydrogen Cyanide
HNO_3 -- Nitric Acid
H_2SO_4 -- Sulfuric Acid
Lb -- Pound[*]
MgO -- Magnesium Oxide
Na -- Sodium
NH_3 -- Ammonia
NO_x -- Nitrogen Oxides
P_2O_5 -- Phosphorus Pentoxide
SO_x -- Sulfur Oxides
TiO_2 -- Titanium Dioxide

---

[*] Readers more familiar with metric units may use the conversion table on page xiv.

CONVERSION FACTORS

To Convert From	To	Multiply By
Acre	Square Meter (m^2)	4047
Acre	hectare (ha)	2.471
Barrel (Bbl)	Gallons (gal)	42
Barrel (Bbl)	Liters (l)	159
Gallon (gal)	Liters (l)	3.785
Inches (in)	Centimeters (cm)	2.54
Feet (ft)	Meter (m)	0.3048
Square feet (ft^2)	Square meter (m^2)	0.0929
Cubic feet (ft^3)	Cubic meter (m^3)	0.0283
Cubic feet (ft^3)	Liters (l)	28.316
Cubic feet/minute	Cubic centimeters/second	472.0
Cubic yard (yd^3)	Cubic meter (m^3)	0.77
Board foot	Cubic meter (m^3)	0.0024
Btu	Grams/calorie (g/cal)	251.98
Pound steam/hour	Btu/hour	1400.0
Btu/hour	Watts	0.293
Pounds (lbs)	Kilogram (kg)	0.45
Ton	Kilogram (kg)	907.1
Pound/ton (lb/ton)	Gram/kilogram (g/kg)	0.496
Farenheit	Centigrade	(^{o}F-32) 5/9

SECTION 1
INTRODUCTION

In October 1985, the U. S. Environmental Protection Agency (EPA) issued the NEDS Source Classification Codes and Emission Factor Listing prepared by EPA's Office of Air Quality Planning and Standards (OAQPS). This document presented source classification codes (SCC's) which serve as the basis for the National Emissions Data System (NEDS). OAQPS's 1985 document presents emission factors for the five NEDS pollutants (particulate matter, sulfur oxides, nitrogen oxides, volatile organic compounds, and carbon monoxide). For many of the SCC's, no emission factors had been presented.

As part of the National Acid Precipitation Assessment Program (NAPAP), the Air and Energy Engineering Research Laboratory (AEERL) of the U. S. EPA updated OAQPS's 1985 document. The focus of Phase I of the update was to supply volatile organic compound (VOC) emission factor estimates for SCC's where substantial emissions would be expected. Minor emphasis was placed on those SCC's where little or no VOC emissions were expected. A summary of the work completed during Phase I of the update and a listing of VOC emission factors is reported in VOC Emission Factors for NAPAP Emission Inventory, EPA-600/7-86-052. The second phase of the update, described herein, focused on the remaining SCC's where VOC emission factor estimates were still needed. Additionally, nitrogen oxide (NO_x) and sulfur oxide (SO_x) emission factor estimates were developed for SCC's where that information had been specifically requested by States.

This report describes the Phase II effort in generating emission factor estimates for VOC, SO_x, and NO_x. A complete listing of the SCC's contained in OAQPS's 1985 NEDS document is presented in Section 9. Approximately 90 additional SCC's are included which have been added to the NEDS system since October 1985. VOC, SO_x, and NO_x emission factors are included from the OAQPS document, as well as all emission factor estimates generated during Phase I and Phase II of this effort. Within the table of emission factors presented here, the SCC's for which emission factor estimates were added during Phase I and Phase II of the update can be identified by the presence of a number in the NOTES column at the far right of each page, and an asterisk in front of the estimate. Some factors listed in the 1985 Report which are not AP-42 factors also have been flagged with an asterisk. Notes explaining how each new emission factor estimate was derived are included in Appendix A of this report. Appendix B contains lettered footnotes for non AP-42 factors which were included in the 1985 Report. The new estimates, which supplement the AP-42 based factors published in October 1985, do not meet the current requirements for development of AP-42 factors. They are based upon whatever data could be obtained from the literature and emission factor estimates obtained from various air quality districts within States. These emission factor estimates, however, provide an interim means for estimating emissions until more supportable, AP-42 type factors become available.

SECTION 2

NEDS SCC'S AND EMISSION FACTOR LISTING

The Source Classification Codes (SCC's) presented in Section 9 comprise the basis upon which the National Emissions Data System (NEDS) is structured. Each SCC represents a specific process or function that is logically associated with a point source of air pollution within a given source category. In NEDS, any operation that causes air pollution can be represented by one or more of these SCC's.

Also presented herein are emission factors that correspond to each SCC from the October 1985 document for the five criteria pollutants: particulate matter (PM), volatile organic compounds (VOC), nitrogen oxides (NO_x), sulfur oxides (SO_x), and carbon monoxide (CO). These factors are used in NEDS to automatically compute estimates of emissions associated with a process when a more accurate estimate is not supplied to the system. Many of these factors are taken directly from AP-42. In some cases, however, they may be derived from information not yet incorporated into AP-42 or may be based on the similarity of one process to another for which emissions information does exist.

The SCC and emission factor listing reported in the October 1985 report resulted from updating all emission factor changes through AP-42, Fourth Edition. The 1985 report contained a number of new SCC's. Additional SCC's have been added to NEDS subsequent to the 1985 Report at the request of State and local agencies. Also included in the listing are changes to any existing SCC's that appeared in the previous listing.

More information on NEDS data coding procedures may be found in AEROS Manual Volume II: AEROS User's Manual, EPA-450/2-76-029a. Instructions for coding specific sources may be found in the Engineering Reference Manual for Coding NEDS and EIS/P&R Forms - Volume I: Introduction, EPA-450/4-80-007; Volume II: Compendia of Processes, EPA-450/4-80-007; and Volume III: Compendia of Processes, EPA-450/4-80-007. Codes used in coding NEDS data may be found in AEROS Manual Volume V: AEROS Manual of Codes, EPA-450/2-76-005a.

Additional information on NEDS data retrievals may be found in the publication NEDS National Emissions Data System Information, EPA-450/4-80-013a. This report is an extract of a more detailed publication: AEROS Manual Volume III: AEROS Summary and Retrieval Manual, EPA-450/2-76-009c. AEROS Volume III contains information on not only the NEDS system but the SAROAD (air quality) system as well.

SECTION 3

STATE SUBMITTALS TO NEDS WHICH REQUIRED DEVELOPMENT OF EMISSION FACTORS

Following the October 1985 NEDS/NAPAP Emission Inventory Workshop held by EPA, a high priority was placed on States submitting emissions data to NEDS. For NAPAP purposes, States were asked to focus on sources emitting 100 tons/year or more of SO_x, NO_x, and VOC. Various procedures may be used to calculate emissions, which are outlined in the NEDS/NAPAP Emission Inventory Workshop Proceedings, October 1985, prepared by EPA. Source test emissions data are considered the most accurate data. If no individual source emissions data are available, the use of AP-42 emission factors is recommended. AP-42 factors are not available for all sources, however. In the absence of AP-42 emission factors, the States may use their own judgement in estimating emissions or they may request that NEDS calculate emissions for these sources. NEDS calculates emissions by using emission factors already in the system for a requested SCC. If no emission factor has ever been reported to NEDS, then resulting emissions are reported as zero.

"Quick Look Reports" from the NEDS file were generated which flagged those SCC's where States have indicated that NEDS calculate emissions and NEDS has reported zero emissions. Providing NO_x, SO_x, and VOC emission factor estimates for these SCC's were given a high priority for this Phase II update.

One hundred eighty-one of these requests for emission factor calculations were addressed during this effort. The remaining 38 percent (112) of the requests were for SCC's where it was not feasible to estimate emission factors. These SCC's fell into two categories: "General" and "Other/Not Specified." The "General" codes are not related to any specific process, but rather identify, in overall terms, a category of emissions. A listing of "General" applies to an entire category, providing a composite or summation of emissions for the entire source. In most cases, these

"General" SCC's are considered too general or obsolete because of the addition to the NEDS system of more specific SCC's which represent single vents or stacks. The second group of SCC's (which end in "97," "98," "99," or contain "888" as the central digits) are used to represent process activities that may exist, but for which no specific SCC's have been defined. These may represent very specific processes, and each reported value from State files may represent a different process. Both the "General" and "Other/Not Classified" SCC's are still used by many States when process activities do not match up exactly with process descriptions of listed SCC's. However, neither the "General" SCC's nor the "Other/Not Classified" SCC's were addressed during this effort. Appendix C summarizes the State requests for emission factor calculations in more detail.

SECTION 4
SOURCES OF INFORMATION

In the current work, the primary objective was to provide VOC emission factor estimates for all SCC's having no VOC emission factor listed. Additionally, NO_x and SO_x emission factor estimates were developed for SCC's where that information was specifically requested by States (as explained in Section 3). The major effort of Phase II was to obtain emissions data from States through emissions data bases, test reports filed in State offices, and emissions testing associated with permitting requirements. Emissions data were also collected through an extensive literature search. For some industries, literature on specific process descriptions was consulted and, based on studies of similar processes in different industries, it was deemed appropriate for this project to transfer emissions factors reported for SCC's in one industry to similar SCC's in other industries. The new emission factor estimates resulting from this current work are not of the same known quality as emission factors tabulated in AP-42. They were generated from sparse data from the literature and from emission factor estimates provided by individual air quality districts within States.

The remainder of this section summarizes the sources of information used to generate emission factor estimates for this Phase II effort.

4.1 STAPPA/ALAPCO SURVEY

In April 1986, the State and Territorial Air Pollution Program Administrators and the Association of Local Air Pollution Control Officials (STAPPA/ALAPCO) initiated a survey of all their members requesting that emissions data be sent to the EPA for use in developing emission factors. It was anticipated that data collected during this survey would provide useful information for this work assignment. However, the information submitted was of limited use in filling in emission factor gaps for NO_x, SO_x, and VOC.

As of April 1, 1987, 139 State and local agencies had responded to the survey, with 39 respondents supplying EPA with emissions data. Of the 39 agencies providing emissions data, 22 of them provided data on sewage sludge or solid waste incinerators only for which emission factors have already been calculated.

As part of this emission factor development task, 21 emission test reports from the STAPPA/ALAPCO Survey were reviewed. A number of the reports provided data for particulate emissions only and some contained emission test summaries for SCC's for which emission factors had already been reported in AP-42. Four emission factor estimates were developed based on emission test reports provided through the STAPPA/ALAPCO Survey responses.

4.2 STATE CONTACTS

A major emphasis of the Phase II work was on contacting State air pollution control agencies in States where industries for which emission factors had not been calculated are located. The States contacted were selected on the basis of their having the largest portion of chemical manufacturing industries, metals operations, and petroleum industries. It was expected that these States would have the highest amount of process-related emissions. During the Phase I work, six States had been contacted; however, only one State was able to send useful data in the time allotted. During Phase II, the other five States were recontacted along with an additional seven States. A total of 13 States were contacted in an attempt to gather emissions data from emission test reports and emission inventories.

A summary of the emissions data provided through these State contacts is presented in Table 2. Six of the States providing data do not use the SCC system to code emission points. Data submitted were reviewed and, where possible, SCC's were assigned based on process descriptions provided. SCC's could not be assigned for approximately one-half of the data provided by these States due to incomplete process descriptions or descriptions that did

TABLE 2. SUMMARY OF EMISSIONS DATA PROVIDED BY STATES

State	Industries Data Were Supplied For	Source of Emissions Data	State Uses SCC System	Comments
California	Chemical manufacturing Petroleum industry	Computerized data base.	Yes	Received during Phase I effort. VOC's include ethane.
Florida	Phosphate operations Sulfuric acid production	Computerized data base.	No	This was the only industry targeted for emissions data from this State. Other data may be available.
Georgia	Non-metallic minerals Mineral products	Review of emission test report summaries.	No	Data not computerized.
Illinois	Chemical manufacturing Secondary metal operations Mineral products Pulp and paper industry	Computerized data base containing permit information.	Yes	Report total hydrocarbons rather than VOC's.
Louisiana	Chemical manufacturing Petroleum industry Phosphate operations Mineral products Pulp and paper industry	Computerized data base containing permit information.	Yes	Additional information available in permit files.
New Jersey	Secondary metal operations Pharmaceuticals Textiles Mineral products	Review of emission test report summaries.	No	Data not computerized.
New York	Chemical manufacturing Secondary metal operations Mineral products	Computerized data base.	No	No production rates available. Requires calling companies directly to get production rates. Report total hydrocarbons rather than VOC's.
North Carolina	Phosphate operations Wood products Textiles Pulp and paper industry	Review of permit files for emissions test reports.	No	Data not computerized.
Ohio	Primary metal operations Secondary metal operations Mineral products	Computerized data base.	Yes	---

TABLE 2. SUMMARY OF EMISSIONS DATA PROVIDED BY STATES (Continued)

State	Industries Data Were Supplied For	Source of Emissions Data	State Uses SCC System	Comments
Pennsylvania	Primary metal operations	Computerized data base.	No	Limited amount of data available. State regulates PM primarily. This was the only industry targeted for emissions data from this State. Other data may be available.
Texas	Chemical manufacturing Petroleum industry Mineral products	Review of permit files.	Yes	Emissions data are computerized, but not accessible. Permit files are not open to the public for many large companies due to pending litigation.
West Virginia	---	---	No	Data not accessible at this time.
Wisconsin	Metals operations Pulp and paper industry	Computerized data base.	Yes	Limited amount of data available. Primarily interested in PM emissions.

not match those listed in the published NEDS report. Telephone calls to companies or a review of permit files would be necessary to acquire more complete process descriptions.

It was assumed that States using the SCC system had assigned the SCC's correctly. In a few cases, calculated emission factors from one State were very different from those submitted by other States for the same SCC. This suggests that one of the States may have assigned the SCC's incorrectly. Emissions data for the same SCC that varied by more than an order of magnitude were reviewed and States were recontacted to correct obvious inconsistencies. However, no specific quality assurance measures were employed to insure that SCC's had been correctly assigned by the States.

Computerized data provided by three of the States using the SCC system proved to be of limited use because the States frequently use the "General" (-01) codes and "Other/Not Classified" (-99) codes when assigning SCC's. This is due, in part, to the age of the records in the computerized data bases. The NEDS system of SCC's is a dynamic one with new SCC's added as requests are received. For example, initially the "General" (-01) codes for chemical manufacturing were the only SCC's available for each chemical listed. Recently, the SCC system has been expanded to provide more specific SCC's for each process vent and stack. Prior to the addition of these new SCC's, States used the "General" (-01) codes or the "Other/Not Classified" (-99) codes and specified the process description in the comments field. The emissions data provided in these codes could not be readily used for developing nation-wide emission factor estimates since different processes were coded with the same general SCC.

4.3 TEST REPORTS ON METALS-ORIENTED OPERATIONS

A document published by JACA Corporation entitled Listing of Emission Test Reports for the Iron and Steel Industry (updated 1986), was reviewed for information on NO_x, SO_x, and VOC emissions for the metals processing industry. Approximately 90 percent of the test reports addressed particulate matter only. Although the test reports containing SO_x, NO_x, or VOC emissions data were identified in the document, the actual data for these pollutants were not included. Over 50 of these test reports maintained in the project files at JACA Corporation were reviewed resulting in emission factor estimates for 12 SCC's.

All data extracted from these test reports were cleared for public use through EPA Region V. Since the emissions data were extracted from relatively old test reports (before 1980), they should be used with caution. However, they provide emission factor estimates which are useful in the absence of more recent data.

4.4 LITERATURE REVIEW

An extensive literature search was conducted during the Phase II work to identify sources of NO_x, SO_x, and VOC emissions data. A number of source specific documents, including Background Information Documents (BIDs), Industrial Process Profiles, Source Assessments, and chemical-specific emission source survey documents, were used to gather information on emissions. Some documents contained results of emission tests and presented emission factors in table format. Others contained emission rates only and States or companies were contacted to obtain production rates. When this information was provided, emission factor estimates were calculated. Some documents contained model plant specifications and associated emission factors. All information taken directly from reports and EPA documents is footnoted and referenced in Appendix A.

Industrial process profiles were reviewed to gain an understanding of various processes. A series of "Industrial Process Profiles for Environmental Use" was developed by EPA as an aid in defining the environmental impacts of industrial activities in the United States. While these documents are somewhat outdated (published in 1977 and again in 1980), they provide useful information on general processes. In some cases, this was the only literature available. Process descriptions, segmented by SCC, are presented including information on input materials, operating parameters, utility requirements, and waste streams. Appendices are included with company listings, production data, and atmospheric emissions, when available. These documents were reviewed and, where available, emissions data were used to calculate emission factor estimates. Where information on emissions is not quantified for specific processes and emissions are considered to be negligible based on the process descriptions an emissions factor estimate of "NEG" has been assigned to the SCC. The most useful information obtained from this series of reports was detailed process descriptions which were used in making judgements on appropriate technology transfers of existing emission factors (see Section 4.6).

4.5 PROCEDURES FOR CALCULATING EMISSION FACTORS

4.5.1 Storage Tanks

VOC emission factor estimates were generated using the 1986 equations published in AP-42 Section 4.3, Fourth Edition (September 1985) for working losses and standing losses from storage tanks. Published vapor pressure and density data and typical tank dimensional information are supplied in an earlier edition of AP-42 (Third Edition).

Pressure storage tanks are divided into low pressure tanks (2.5 to 15 psig) and high pressure tanks (greater than 15 psig). For high pressure tanks, there are no atmospheric emissions from standing losses or working losses. For low pressure tanks, losses occur only due to atmospheric venting during filling operations. In examining emissions from pressure storage, the vapor pressures of the chemicals in question were found in the literature or computed using Antoine's Equation at ambient temperature (68^{o}F) and then compared to the 15 psig criteria. This provided a quick check of the storage pressure of the pure component at ambient temperature. In addition, the lower explosion limit (LEL) fraction was applied to determine whether the chemical would be stored at high or low pressure.

Most of the chemicals listed in NEDS under the pressure storage category have vapor pressures in excess of 15 psig and therefore would not have emissions resulting from pressure storage. The pressure during storage was computed assuming that the pure component chemicals are stored at pressures associated with concentrations which are 25 percent of their lower explosion limit for safety reasons. Some other chemicals are stored above 15 psig in pressured tanks due to their toxicity.

4.5.2 Emissions from Combustion Sources

VOC emission factor estimates for incinerators and flares were estimated assuming 98 percent combustion efficiencies, which is currently accepted as achievable by EPA in its standards development activities. Speciated composites for ten natural gas samples were obtained from Emissions from Refinery Process Heaters Equipped with Low-NO_x Burners (KVB11-6019-1274, March 1981) and NO_x Emissions from Petroleum Industry Operations (API Publication No. 4311, American Petroleum Institute, October 1979). Using these speciated profiles, natural gas was calculated to contain between 0.5 and 1.25 percent VOC by weight. Typical densities of natural gas were taken from the literature and emission factors were generated. There is great variability in the operating parameters of incinerators (i.e., temperature, residence time) which influence the quantity of emissions and should be considered when applying these emission factor estimates.

VOC emission factor estimates for oil-fired and process gas-fired incinerators were estimated from emission factors presented for oil-fired and process gas-fired heaters, because no typical speciated profiles were obtained for these fuels. Natural gas-fired incinerators were calculated to generate VOC emissions twice as high as the emissions from natural gas-fired process heaters. This is due, in part, to lower temperatures and shorter residence times of the materials in the incinerators. This same ratio of emissions from gas-fired incinerators to emissions from gas-fired heaters was applied to the other fuel-fired heaters to obtain emission factor estimates for incinerators. The estimated VOC emission factors for incinerators and flares were transferred to other industries under the assumption that the emissions from these combustion sources depend primarily on the type of fuel burned, rather than on the material being treated.

4.5.3 Fugitive Emissions from Organic Chemical Manufacturing

Fugitive VOC emissions or equipment leaks are not related to production volume, as are process vent emissions. Instead, equipment leaks are related to process unit complexity (i.e., the number of equipment components in the process units). Emission estimates for equipment leaks, therefore, are presented as total annual emissions (pounds/process unit/year) for individual process units. Estimates were prepared using data provided in EPA's Organic Chemical Manufacturing (OCM) Series (EPA-450/3-80-025a-j), which provided model unit equipment counts for the major sources of fugitive emissions (pumps, valves, pressure release devices, compressors). Other equipment types that were not listed individually were estimated from the OCM section on fugitive emissions. The procedure used in generating these emission factor estimates is presented in Appendix D.

The VOC emission factor estimates for fugitive emissions which are given in the NAPAP listing that follows are presented as pounds/process unit/year values. In order to implement these estimates, the factor must be coded as a user-computed estimate and the production rate given as unity. The NEDS inventory computer program will then automatically compute the annual emissions for equipment leaks.

4.6 TECHNOLOGY TRANSFER

Emission factors have previously been established for some groups of sources, while factors were missing for very similar sources in other categories. Emission factor estimates were developed for a variety of SCC's based on the similarity of one process to another. Information gathering involved extensive review of the literature, conversations with State air pollution control personnel, and conversations with industry to learn more about various processes. Descriptions of raw materials used, operating parameters of equipment, and the manufacturing processes of products were compared to determine the similarity of the processes. Emission factor estimates were then generated through technology transfer.

Three categories where new emission factor estimates were generated based on technology transfer of previously reported emission factors are described below. A review of the footnotes (Appendix A) will identify other areas where technology transfer was used to generate new emission factor estimates.

4.6.1 Process Heaters

The AP-42 background material was reviewed for calculations of emission factors for process heaters in the oil, gas, and petroleum industry. The emission factors listed for process heaters had been previously transferred from those factors published for similar fuel-fired boilers. Based on the background information, it was deemed appropriate to transfer these emission factors to process heaters in other industries. The emissions from process heaters depend on the type of fuel burned rather than on the material being heated, therefore, emissions from the heater are expected to be similar in different industries. If operating parameters (i.e., temperature and residence time) vary greatly, emissions may be different.

4.6.2 Crushing and Grinding Operations

A series of Industrial Process Profiles for Environmental Use were reviewed for a number of metal and mineral products industries. In many cases, particulate matter was identified as the only atmospheric emissions during crushing and grinding operations. The only source of VOC emissions from crushing and grinding operations would be unbound VOC in the ore or rock. Based on descriptions of the raw materials and the equipment used to crush and grind the materials, it was determined that no VOC emissions would result. Consistent with this reasoning, zero VOC emissions had been previously reported in AP-42 for crushing and grinding of primary zinc, secondary aluminum, bricks, cement, glass fiber, gypsum ore, lime, and sand.

4.6.3 Furnaces and Dryers

Where enough process information was available, emission factors from various types of furnaces and dryers were transferred across industries. For example, within the glass manufacturing industry, furnaces are listed under wool-type glass, textile-type glass, container glass, and flat glass. Descriptions of the different processes used to produce these types of glass were reviewed. It was found that the operating parameters of the furnaces are all virtually the same. Furthermore, it was stated in Background Information Documents that emissions from these furnaces are independent of the type of glass produced. VOC emission factors were previously calculated for furnaces used in producing two types of glass. These were transferred to the other furnaces within the glass manufacturing industry.

Similar technology transfers were made for furnaces in the primary metals industry, for dryers in the secondary metals industry, and for dryers in the mineral products industry.

SECTION 5
CHANGES TO NEDS LISTING

In working with the NEDS listing of SCC's and through discussions with State agencies and industries, it was determined that some changes to the SCC listing are needed. The SCC listing is a dynamic one with new SCC's being added as requests are received. Some SCC's are no longer valid in that the processes are no longer used in the United States. Other SCC's need changes to the process descriptions or type of units listed. Final recommendations for changes to the SCC's have resulted from working meetings with personnel from EPA's Office of Air Quality Planning and Standards (OAQPS) and EPA's Air and Energy Engineering Research Laboratory (AEERL). States that had originally requested addition of some of the SCC's in question were contacted about the recommendations.

Since the October 1985 NEDS Report, 91 new SCC's have been added to the system and 34 SCC's have been deleted. Appendix E contains a complete listing of the changes made to the SCC listing since the 1985 Report. Many additions resulted from State requests for new SCC's. Other additions represent processes that were previously listed, but with different units for reporting emission factors. Deletions to the SCC listing resulted from thorough review of the industry and identification of processes which are no longer used in the United States. Examples of deleted SCC's include oil-fired flares and chemical storage tank SCC's which were originally misclassified. The SCC's which were deleted from this published listing have been retained in the NEDS computer inventory, but will not be printed in future listings.

SECTION 6

QUALITY OF NEW EMISSION FACTOR ESTIMATES

Emission factor estimates that have been added to this NAPAP listing are not of the known quality as the previously reported AP-42 based emission factors. In terms of the AP-42 ratings, the estimates provided from this effort should be considered of "E" quality because they have not been subjected to rigorous quality assurance. In some cases, the new emission factors may be of higher quality than this "E" rating implies. However, the data must be extensively reviewed and verified before higher ratings could be applied. The goal of this effort was to fill in gaps in the 1985 NEDS document for VOC emission factors and to provide NO_x and SO_x emission factor estimates for SCC's specified by States. As previously discussed, information was gathered from a variety of sources including unverified State data, secondary references such as draft or unpublished reports, and personal communication.

Within the main table of this report, new emission factor estimates are readily identified by the presence of a number in the NOTES column at the far right of each page and an asterisk by the factor. Each new emission factor estimate listed in this document has a note explaining the source of information and calculation methods. These notes are found in Appendix A. All other emission factors which do not have a number associated with them in the NOTES column have been taken directly from the 1985 NEDS document. Some of the factors listed in the 1985 Report are not from AP-42. These factors have also been flagged with an asterisk and lettered footnotes in Appendix B should be consulted to determine how these factors were derived.

SECTION 7

EMISSIONS CALCULATION PROCEDURES

In order to calculate emissions using the emission factors in this publication, certain data values must be present. These values include: (1) an annual operating rate; (2) fuel parameter, if applicable; (3) emission factor from the SCC file; and (4) percent (%) control efficiency, if a control device is present. Calculated emissions are derived as follows:

Calculated Emissions (Tons/Year) =

$$\underline{\text{Annual Operating Rate for SCC}} \times \frac{\text{Emission Factor From SCC File}}{\text{2,000 Pounds/Ton}} \times \underline{\text{Fuel Parameter If Applicable}} \times \frac{\text{100-Control Efficiency}}{100}$$

Where:

Annual Operating Rate = SCC Units/Year
Emission Factor = Pounds/SCC Unit
Fuel Parameter = Ash or Sulfur Content of Fuel on Weight-by-Percent (%) Basis
Control Efficiency = Pollutant Control Device Percent (%) Efficiency

7.1 FUGITIVE EMISSIONS CALCULATIONS

The NEDS SCC's were recently expanded to include many individual unit operations within chemical process units. One additional SCC in most chemical process units is for "Fugitive Emissions: General." Fugitive emissions or equipment leaks are not proportional to production rate. Rather, they are associated with process unit complexity (i.e., the number of equipment components in the process unit). As a result, the emissions from equipment leaks are presented in terms of pounds/year, not pounds per SCC unit as with the other SCC's. To implement the fugitive emissions estimate given in the listing, the source must be coded with NEDS emission estimation method code 3 (emissions to be calculated by a computerized method) with an associated production volume of unity. This permits the NEDS inventory computer program to automatically calculate emissions.

Emission estimates are presented for equipment leaks in a limited number of chemical process unit types. Additional discussions of estimating fugitive emissions is presented in Appendix D.

7.2 VOC EMISSIONS CALCULATION

Per agency policy and EPA guidance to States for the preparation of emission inventories of VOC, certain VOC's that are considered to be photochemically nonreactive under atmospheric conditions should not be included in emission inventories for ozone SIP development. This subject is discussed further in the report Procedures for the Preparation of Emission Inventories for Volatile Organic Compounds, Volume I (Second Edition) (EPA-450/2-77-028). However, some of these photochemically nonreactive VOC are toxic (e.g., methylene chloride) and should be included in air toxics inventories. Air toxics are not addressed specifically in this document. Therefore, needs and requirements may differ when toxics inventories are compiled.

Nonreactive VOC components are identified per data given in the VOC Species Data Manual (Second Edition) (EPA-450/4-80-015) and the publication Compilation of Air Pollutant Emission Factors, AP-42. However, some categories do not have VOC species data. These categories use the AP-42 nonmethane VOC emission factors to represent reactive VOC emission factors. The following compounds are considered to be photochemically nonreactive:

Methane
Ethane
Trichlorotrifluoroethane (Freon 113)
Methylene Chloride
1,1,1-Trichloroethane (Methyl Chloroform)
Trichlorofluoromethane
Dichlorodifluoromethane

Chlorodifluoromethane
Trifluoromethane
Dichlorotetrafluoroethane
Chloropentafluoroethane

In some State-based data (for example, California, New York, and Illinois), emissions of organic compounds are viewed as total organics or total hydrocarbons. California also reports the fraction of reactive organic compounds. While the classification of reactive organic compounds is similar to EPA's definition of VOC, this classification is somewhat different (at least in California) in that it includes ethane. In compiling emission factors for the SCC's in the organic chemical manufacturing section, the effect of this definition on the emission factor was deemed negligible. The footnotes associated with emission factors reported under VOC's should be read carefully to determine what compounds are included in the emission factor.

7.3 SO_x AND NO_x EMISSION FACTOR CALCULATIONS

Emissions of sulfur dioxide represent the total weight of gaseous sulfur oxide emissions expressed as the equivalent weight of SO_2. Emissions of SO_3 are adjusted to the equivalent weight of SO_2 by multiplying the SO_3 emissions by the ratio of molecular weights (64/80) to express as the equivalent weight of SO_2. The weight of SO_2 and SO_3 adjusted to an equivalent weight of SO_2 are then added together and reported as SO_2 emissions. Particulate sulfate is reported as particulates rather than SO_2.

For NO_x emissions, the emissions are expressed as the equivalent weight of NO_2, regardless of what nitrogen oxide species are actually emitted. Molecular weight adjustments to an NO_2 basis are appropriate. The emission factors that appear in the NEDS SCC and Emission Factor Listing are all expressed as the equivalent weight of SO_2 and NO_2 as described above. Normally, AP-42 emission factors for NO_x are expressed as NO_2, unless indicated otherwise in an AP-42 footnote.

SECTION 8

RECOMMENDATIONS FOR FURTHER STUDY

This section discusses the portions of the SCC listing for which criteria pollutant emission factor estimates are still needed. In examining those areas that are deficient in emissions data, recommendations are made for further study to complete the emission factor estimates for the majority of the SCC's that currently have no estimates. Potential data sources, estimation procedures, and resource requirements are given.

The emphasis of this work assignment was on calculating VOC emission factors for all SCC's previously lacking this information. NO_x and SO_x emission factors were also generated, but only for those SCC's that States had used to report emissions. In future studies, emphasis should be placed on calculating NO_x and SO_x emission factors for the remaining SCC's requiring this information. Sources of emissions data have been identified during this effort which can be reviewed in greater detail to extract the information needed to calculate many NO_x and SO_x emission factors. Additional State contacts may provide emissions data for source categories where data are still lacking.

Deficiencies in the emission factor listing for the other criteria pollutants (particulate matter and carbon monoxide) should also be addressed in future studies.

8.1 NO_x AND SO_x EMISSION FACTORS

Source categories that States specifically used to report NO_x and SO_x emissions which still require emission factor calculations are the highest priority areas for future studies. EPA is still receiving reports from States which must be addressed as they are received. Useful data were obtained for calculating many NO_x and SO_x emission factors during the Phase II update, but due to time and resource limitations these emissions data have not been thoroughly reviewed.

8.1.1 State Data

Five of the thirteen States (Illinois, New York, Louisiana, Ohio, and Texas) submitting information during the Phase II effort provided NO_x and SO_x data which may be useful in calculating additional emission factor estimates. It will be necessary to recontact the States to acquire more complete process descriptions in order to assign SCC's or to acquire the production data necessary to calculate emission factors from the emissions test data already supplied. In some cases, the States can not supply this information due to confidentiality agreements with companies. The States have suggested contacting companies directly to gain access to the necessary information.

These State data may be useful in calculating NO_x and SO_x emission factor estimates for the chemical manufacturing industry (Illinois, Texas, and Louisiana) and for metal processing operations and mineral products manufacturing (Illinois, New York, and Ohio).

8.1.2 Additional State Contacts

States in the western United States may be able to provide additional information on metals processing, mining operations, and logging operations. Additional contacts should be made to States where these operations are large sources of atmospheric emissions (e.g., New Mexico and Arizona for mining, Oregon and Washington for logging). Other States had been contacted previously for information on one specific process (i.e., Wyoming for sodium carbonate, Montana for vermiculite production, and Tennessee for explosives manufacturing). Initial contacts have been made at these States and it may be possible to obtain additional data through follow-up contacts. California provided large quantities of emissions data on VOC as part of the Phase I work. This State could possibly provide as much information on SO_x and NO_x emissions.

8.1.3 Literature Review

Pertinent literature on atmospheric emissions from many source categories has been obtained during the Phase I and Phase II work. These reports and documents were extensively reviewed to extract VOC emissions data. They should be reviewed a second time to identify SO_x and NO_x emissions data. The published literature also provided valuable information on process descriptions, operating parameters, raw materials, and end products for many source categories. This information was useful in comparing similar processes in different industries and applying technology transfer of emission factors across industries. The technology transfers were applied primarily for VOC emission factors. Additional work is needed to apply technology transfer for NO_x and SO_x emission factors.

8.2 PARTICULATE MATTER (PM) AND CARBON MONOXIDE (CO) EMISSION FACTORS

Future studies should also address gaps in the NEDS listing for particulate matter (PM) and carbon monoxide (CO). Initially, the NEDS listing would need to be reviewed to identify which industries and source categories are lacking in PM and CO emission factors. At the same time, literature should be reviewed to identify the industries and source categories where large PM or CO emissions are expected. This information would help to determine the initial focus.

Many emission factors for PM have already been incorporated from AP-42 Fourth Edition and Supplement A to AP-42. Information from numerous EPA standards setting activities (i.e., New Source Performance Standards) has been reviewed, and AP-42 emission factors have been generated. Process descriptions and details concerning equipment types and materials used in various processes should be reviewed in an effort to apply technology transfer of PM emission factors from one industry to another.

CO emission factors have not been developed for as many categories as the other criteria pollutants. Emission estimates for this pollutant have been given lower priority in factor development work. The NEDS listing should be reviewed along with literature on CO emissions to determine which source categories are large emitters of CO.

8.3 VOC EMISSION FACTORS

The emission factor estimates developed during Phase I and Phase II of this work are of unknown or uncertain quality and do not meet AP-42 standards. They are based on a variety of sources including unverified State data, secondary references such as draft or unpublished reports, and personal communication. The information supplied here provides a strong base on which to develop AP-42 emission factors in the future. Future work should include identification of source categories for which high quality data have been collected. In some cases, emissions testing is recommended for improving the poorest quality factors with the larger impact on total emissions. Emphasis should be placed on testing of sources with large VOC emission factors where emissions are expected to be significant.

SECTION 9
SOURCE CLASSIFICATION CODES AND EMISSION FACTORS

This section contains emission factors previously reported in OAQPS's 1985 document, NEDS Source Classification Codes and Emission Factor Listing, and emission factors recently developed by the Air and Energy Engineering Research Laboratory (AEERL) of the U. S. Environmental Protection Agency. Emission factor estimates which have been added as a result of the Phase I and Phase II effort can be identified by an asterisk and by the presence of a number in the NOTES column to the far right of each page. Notes explaining how each new emission factor estimate was derived are included in Appendix A of this report. All other emission factors listed have been extracted directly from OAQPS's 1985 NEDS document. Lettered footnotes appearing in the table were reprinted directly from the 1985 NEDS document and are included in Appendix B of this report. Some of these lettered footnotes identify non AP-42 factor which were included in the 1985 Report. These non AP-42 factors have also been flagged with an asterisk.

Some emission factors have been presented as negligible (NEG) in the table. .For SCC's where no quantitative data were available and a review of the process and raw materials indicate that the source is a minor emission source (less than 100 tons/year), a "NEG" has been assigned. Before using any emission factors from this table the footnotes and notes reported in the appendices should be consulted to give the user an indication of how the emission factors were derived.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
EXTERNAL COMBUSTION BOILERS - ELECTRIC GENERATION - 4911[a]								
Anthracite Coal								
1-01-001-01	- Pulverized Coal	10.0 A	39.0 S	18.0	0.07	0.6	Tons Burned	
1-01-001-02	- Traveling Grave Stokers	9.1	39.0 S	10.0	0.07	0.6	Tons Burned	
Bituminous Coal								
1-01-002-01	- Pulverized Coal: Wet Bottom	7.0 A	39.0 S	34.0	0.07	0.6	Tons Burned	
1-01-002-02	- Pulverized Coal: Dry Bottom	10.0 A	39.0 S	21.0	0.07	0.6	Tons Burned	
1-01-002-03	- Cyclone	2.0 A	39.0 S	37.0	0.07	0.6	Tons Burned	
1-01-002-04	- Spreader Stoker	60.0	39.0 S	14.0	0.07	5.0	Tons Burned	
1-01-002-05	- Traveling Grate (Overfeed) Stoker	16.0	39.0 S	7.5	0.07	6.0	Tons Burned	
1-01-002-12	- Pulverized Coal: Dry Bottom (Tangential Firing)	10.0 A	39.0 S	15.0	0.07	0.6	Tons Burned	
1-01-002-17	- Atmospheric Fluidized Bed		*14.0	*13.0	*0.07		Tons Burned	279
Subbituminous Coal								
1-01-002-21	- Pulverized Coal: Wet Bottom	7.0 A	35.0 S	34.0	0.07	0.6	Tons Burned	
1-01-002-22	- Pulverized Coal: Dry Bottom	10.0 A	35.0 S	21.0	0.07	0.6	Tons Burned	
1-01-002-23	- Cyclone	2.0 A	35.0 S	37.0	0.07	0.6	Tons Burned	
1-01-002-24	- Spreader Stoker	60.0	35.0 S	14.0	0.07	5.0	Tons Burned	
1-01-002-25	- Traveling Grate (Overfeed) Stoker	16.0	35.0 S	7.5	0.07	6.0	Tons Burned	
1-01-002-26	- Pulverized Coal: Dry Bottom (Tangential Firing)	10.0 A	35.0 S	15.0	0.07	0.6	Tons Burned	
Lignite								
1-01-003-01	- Pulverized Coal	6.3 A	30.0 S	14.0	0.07	0.6	Tons Burned	
1-01-003-02	- Pulverized Coal: Tangential Firing	6.3 A	30.0 S	8.0	0.07	0.6	Tons Burned	
1-01-003-03	- Cyclone	6.7 A	30.0 S	17.0	0.07	0.6	Tons Burned	
1-01-003-04	- Traveling Grate (Overfeed) Stoker	2.9 A	30.0 S	6.0	0.07	6.0	Tons Burned	
1-01-003-06	- Spreader Stoker	6.8 A	30.0 S	6.0	0.07	5.0	Tons Burned	
Residual Oil								
1-01-004-01	- Grade 6 Oil: Normal Firing (Includes horizontally, opposed and front wall firing)	*13.0 S[b]	159.3 S	67.0	0.76	5.0	10^3 Gallons Burned	
1-01-004-04	- Grade 6 Oil: Tangential Firing	*13.0 S[b]	159.3 S	42.0	0.76	5.0	10^3 Gallons Burned	
1-01-004-05	- Grade 5 Oil: Normal Firing	10.0	159.3 S	67.0	0.76	5.0	10^3 Gallons Burned	
1-01-004-06	- Grade 5 Oil: Tangential Firing	10.0	159.3 S	42.0	0.76	5.0	10^3 Gallons Burned	
Distillate Oil								
1-01-005-01	- Grades 1 and 2 Oil	2.0	143.6 S	24.0	0.2	5.0	10^3 Gallons Burned	
1-01-005-04	- Grade 4 Oil: Normal Firing	7.0	*150.0 S[c]	67.0	0.76	5.0	10^3 Gallons Burned	
1-01-005-05	- Grade 4 Oil: Tangential Firing	7.0	*150.0 S[c]	42.0	0.76	5.0	10^3 Gallons Burned	

---

[*] Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Natural Gas								
1-01-006-01	- Boilers over 100 MMBtu/Hr except tangentially fired units	3.0	0.6	550.0	1.4	40.0	10^6 Cubic Feet Burned	
1-01-006-02	- Boilers under 100 MMBtu/Hr except tangentially fired units	3.0	0.6	140.0	2.8	35.0	10^6 Cubic Feet Burned	
1-01-006-04	- Tangentially Fired Boilers	3.0	0.6	275.0	1.4	40.0	10^6 Cubic Feet Burned	
Process Gas (Specify Gas in Comments)[c]								
1-01-007-01	- Boilers over 100 MMBtu/Hr	3.0	950.0 S	550.0	1.4	40.0	10^6 Cubic Feet Burned	
1-01-007-02	- Boilers under 100 MMBtu/Hr	3.0	950.0 S	140.0	2.8	35.0	10^6 Cubic Feet Burned	
Coke[c]								
1-01-008-01	- All Boiler Sizes	10.0 A	39.0 S	21.0	0.07	0.6	Tons Burned	
Wood/Bark Waste								
1-01-009-01	- Bark-Fired Boiler	47.0	0.15	2.8	1.4	4.0	Tons Burned	
1-01-009-02	- Wood/Bark-Fired Boiler	7.2	0.15	2.8	1.4	4.0	Tons Burned	
1-01-009-03	- Wood-Fired Boiler	8.0	0.15	2.8	1.4	4.0	Tons Burned	
Liquified Petroleum Gas (LPG)								
1-01-010-01	- Butane	0.28	*86.5 S[c]	13.2	0.26	3.3	10^3 Gallons Burned	
1-01-010-02	- Propane	0.26	*86.5 S[c]	12.4	0.25	3.1	10^3 Gallons Burned	
Bagasse								
1-01-011-01	- All Boiler Sizes	16.0	0.0	1.2	*2.0[d]	*2.0[d]	Tons Burned	
Solid Waste								
1-01-012-01	- Specify Waste Material in Comments			*3.8	*2.0		Tons Burned	137, 236
Liquid Waste								
1-01-013-01	- Specify Waste Material in Comments				*1.0		10^3 Gallons Burned	236
1-01-013-02	- Waste Oil	19.0[e]	*160	*67	*1.0		10^3 Gallons Burned	236
EXTERNAL COMBUSTION BOILERS - INDUSTRIAL[a]								
Anthracite Coal								
1-02-001-01	- Pulverized Coal	10.0 A	39.0 S	18.0	0.07	0.6	Tons Burned	
1-02-001-04	- Traveling Grate Stokers	9.1	39.0 S	10.0	0.07	0.6	Tons Burned	
1-02-001-07	- Hand-Fired	10.0	39.0 S	3.0	10.0	90.0	Tons Burned	
Bituminous Coal								
1-02-002-01	- Pulverized Coal: Wet Bottom	7.0 A	39.0 S	34.0	0.07	0.6	Tons Burned	
1-02-002-02	- Pulverized Coal: Dry Bottom	10.0 A	39.0 S	21.0	0.07	0.6	Tons Burned	

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO$_x$ Lbs/Unit	NO$_x$ Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Bituminous Coal (Continued)								
1-02-002-03	Cyclone	2.0 A	39.0 S	37.0	0.07	0.6	Tons Burned	
1-02-002-04	Spreader Stoker	60.0	39.0 S	14.0	0.07	5.0	Tons Burned	
1-02-002-05	Overfeed Stoker	16.0	39.0 S	7.5	0.07	6.0	Tons Burned	
1-02-002-06	Underfeed Stoker	15.0	31.0 S	9.5	1.3	11.0	Tons Burned	
1-02-002-12	Pulverized Coal: Dry Bottom (Tangential Firing)	10.0 A	39.0 S	15.0	0.07	0.6	Tons Burned	
1-02-002-13	Coal Slurry		*44.3	*9.3	*0.4		Tons Burned	337
1-02-002-17	Atmospheric Fluidized Bed		*14.0	*13.0	*0.07		Tons Burned	279
1-02-002-19	Cogeneration	10.0 A	39.0 S	15.0	0.07	0.6	Tons Burned	
Subbituminous Coal								
1-02-002-21	Pulverized Coal: Wet Bottom	7.0 A	35.0 S	34.0	0.07	0.6	Tons Burned	
1-02-002-22	Pulverized Coal: Dry Bottom	10.0 A	35.0 S	21.0	0.07	0.6	Tons Burned	
1-02-002-23	Cyclone	2.0 A	35.0 S	37.0	0.07	0.6	Tons Burned	
1-02-002-24	Spreader Stoker	60.0	35.0 S	14.0	0.07	5.0	Tons Burned	
1-02-002-25	Traveling Grate (Overfeed) Stoker	16.0	35.0 S	7.5	0.07	6.0	Tons Burned	
1-02-002-26	Pulverized Coal: Dry Bottom (Tangential Firing)	10.0 A	35.0 S	15.0	0.07	0.6	Tons Burned	
1-02-002-29	Cogeneration	10.0 A	35.0 S	15.0	0.07	0.6	Tons Burned	
Lignite								
1-02-003-01	Pulverized Coal	6.3 A	30.0 S	14.0	0.07	0.6	Tons Burned	
1-02-003-02	Pulverized Coal: Tangential Firing	6.3 A	30.0 S	8.0	0.07	0.6	Tons Burned	
1-02-003-03	Cyclone	6.7 A	30.0 S	17.0	0.07	0.6	Tons Burned	
1-02-003-04	Traveling Grate (Overfeed) Stoker	2.9 A	30.0 S	6.0	0.07	6.0	Tons Burned	
1-02-003-06	Spreader Stoker	6.8 A	30.0 S	6.0	0.07	5.0	Tons Burned	
1-02-003-07	Cogeneration	6.3 A	30.0 S	8.0	0.07	0.6	Tons Burned	
Residual Oil								
1-02-004-01	Grade 6 Oil	*12.0 S[b]	158.6 S	55.0	0.28	5.0	10^3 Gallons Burned	
1-02-004-04	Grade 5 Oil	10.0	158.6 S	55.0	0.28	5.0	10^3 Gallons Burned	
1-02-004-05	Cogeneration	*12.0 S[b]	158.6 S	55.0	0.28	5.0	10^3 Gallons Burned	
Distillate Oil								
1-02-005-01	Grades 1 and 2 Oil	2.0	143.6 S	20.0	0.2	5.0	10^3 Gallons Burned	
1-02-005-04	Grade 4 Oil	7.0	*150.0 S[c]	20.0	0.2	5.0	10^3 Gallons Burned	
1-02-005-05	Cogeneration	2.0	143.6 S	20.0	0.2	5.0	10^3 Gallons Burned	
Natural Gas								
1-02-006-01	Over 100 MMBtu/Hr	3.0	0.6	550.0	1.4	40.0	10^6 Cubic Feet Burned	
1-02-006-02	10-100 MMBtu/Hr	3.0	0.6	140.0	2.8	35.0	10^6 Cubic Feet Burned	
1-02-006-03	Less Than 10 MMBtu/Hr	3.0	0.6	100.0	5.3	20.0	10^6 Cubic Feet Burned	
1-02-006-04	Cogeneration	3.0	0.6	275.0	1.4	40.0	10^6 Cubic Feet Burned	

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Process Gas								
1-02-007-01	Petroleum Refinery Gas[c]	3.0	950.0 S	140.0	2.8	35.0	10^6 Cubic Feet Burned	
1-02-007-04	Blast Furnace Gas	*2.9[c]	*950.0 S[c]	*23.0[d]	*0.0[d]	*13.7[d]	10^6 Cubic Feet Burned	
1-02-007-07	Coke Oven Gas	*6.2[c]	*680.0 S[c]	*80.0[d]	*1.2[d]	*18.4[d]	10^6 Cubic Feet Burned	
1-02-007-10	Cogeneration		*950.0 S[c]		*2.8		10^6 Cubic Feet Burned	373
1-02-007-99	Other: Specify in Comments		*950.0 S[c]				10^6 Cubic Feet Burned	
Coke[c]								
1-02-008-02	All Boiler Sizes	7.0 A	39.0 S	14.0	0.07	0.6	Tons Burned	
1-02-008-04	Cogeneration	7.0 A	39.0 S	14.0	0.07	0.6	Tons Burned	
Wood/Bark Waste								
1-02-009-01	Bark-Fired Boiler (Greater than 50,000 LB Steam)	47.0	0.15	2.8	1.4	4.0	Tons Burned	
1-02-009-02	Wood/Bark-Fired Boiler (Greater than 50,000 LB Steam)	7.2	0.15	2.8	1.4	4.0	Tons Burned	
1-02-009-03	Wood-Fired Boiler (Greater than 50,000 LB Steam)	8.8	0.15	2.8	1.4	4.0	Tons Burned	
1-02-009-04	Bark-Fired Boiler (Less than 50,000 LB Steam)	47.0	0.15	0.68	1.4	4.0	Tons Burned	
1-02-009-05	Wood/Bark-Fired Boiler (Less than 50,000 LB Steam)	7.2	0.15	0.68	1.4	4.0	Tons Burned	
1-02-009-06	Wood-Fired Boiler (Less than 50,000 LB Steam)	8.8	0.15	0.68	1.4	4.0	Tons Burned	
1-02-009-07	Wood Cogeneration	7.2	0.15	2.8	1.4	4.0	Tons Burned	
Liquified Petroleum Gas (LPG)								
1-02-010-01	Butane	0.28	*86.5 S[c]	13.2	0.26	3.3	10^3 Gallons Burned	
1-02-010-02	Propane	0.26	*86.5 S[c]	12.4	0.25	3.1	10^3 Gallons Burned	
Baggase								
1-02-011-01	All Boiler Sizes	16.0	0.0	1.2	*2.0[d]	*2.0[d]	Tons Burned	
Solid Waste								
1-02-012-01	Specify Waste Material in Comments		*1.6	*5.9	*2.0		Tons Burned	342
Liquid Waste (See Major Group 26, SCC 3-07-001-04 for Pulp Mill Recovery Boilers)								
1-02-013-01	Specify Waste Material in Comments		*28.0	*23.0	*1.0		10^3 Gallons Burned	343
1-02-013-02	Waste Oil	19.0[e]	*130.0	*60.0	*1.0		10^3 Gallons Burned	343
CO Boiler[c]								
1-02-014-01	Natural Gas	3.0	0.6	140.0	2.8	35.0	10^6 Cubic Feet Burned	
1-02-014-02	Process Gas	3.0	950.0 S	140.0	2.8	35.0	10^6 Cubic Feet Burned	

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO$_x$ Lbs/Unit	NO$_x$ Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
CO Boiler (Continued)[c]								
1-02-014-03	- Distillate Oil	2.0	144.0 S	20.0	0.2	5.0	10^3 Gallons Burned	
1-02-014-04	- Residual Oil	12.0 S	159.0 S	55.0	0.28	5.0	10^3 Gallons Burned	
EXTERNAL COMBUSTION BOILERS - COMMERCIAL/INSTITUTIONAL[a]								
Anthracite Coal								
1-03-001-01	- Pulverized Coal	10.0 A	39.0 S	18.0	0.07	0.6	Tons Burned	
1-03-001-02	- Traveling Grate Stokers	9.1	39.0 S	10.0	0.07	0.6	Tons Burned	
1-03-001-03	- Hand-Fired	10.0	39.0 S	3.0	10.0	90.0	Tons Burned	
Bituminous Coal								
1-03-002-05	- Pulverized Coal: Wet Bottom	7.0 A	39.0 S	34.0	0.07	0.6	Tons Burned	
1-03-002-06	- Pulverized Coal: Dry Bottom	10.0 A	39.0 S	21.0	0.07	0.6	Tons Burned	
1-03-002-07	- Overfeed Stoker	16.0	39.0 S	7.5	0.07	6.0	Tons Burned	
1-03-002-08	- Underfeed Stoker	15.0	31.0 S	9.5	1.3	11.0	Tons Burned	
1-03-002-09	- Spreader Stoker	60.0	39.0 S	14.0	0.07	5.0	Tons Burned	
1-03-002-14	- Hand-Fired	15.0	31.0 S	3.0	10.0	90.0	Tons Burned	
1-03-002-16	- Pulverized Coal: Dry Bottom (Tangential Firing)	10.0 A	39.0 S	15.0	0.07	0.6	Tons Burned	
1-03-002-17	- Atmospheric Fluidized Bed		*14.0	*13.0	*0.07		Tons Burned	139, 366
Subbituminous Coal								
1-03-002-21	- Pulverized Coal: Wet Bottom	7.0 A	35.0 S	34.0	0.07	0.6	Tons Burned	
1-03-002-22	- Pulverized Coal: Dry Bottom	10.0 A	35.0 S	21.0	0.07	0.6	Tons Burned	
1-03-002-23	- Cyclone	2.0 A	35.0 S	37.0	0.07	0.6	Tons Burned	
1-03-002-24	- Spreader Stoker	60.0	35.0 S	14.0	0.07	5.0	Tons Burned	
1-03-002-25	- Traveling Grate (Overfeed) Stoker	16.0	35.0 S	7.5	0.07	6.0	Tons Burned	
1-03-002-26	- Pulverized Coal: Dry Bottom (Tangential Firing)	10.0 A	35.0 S	15.0	0.07	0.6	Tons Burned	
Lignite								
1-03-003-05	- Pulverized Coal	6.3 A	30.0 S	14.0	0.07	0.6	Tons Burned	
1-03-003-06	- Pulverized Coal: Tangential Firing	6.3 A	30.0 S	8.0	0.07	0.6	Tons Burned	
1-03-003-07	- Traveling Grate (Overfeed) Stoker	2.9 A	30.0 S	6.0	0.07	6.0	Tons Burned	
1-03-003-09	- Spreader Stoker	6.8 A	30.0 S	6.0	0.07	5.0	Tons Burned	
Residual Oil[c]								
1-03-004-01	- Grade 6 Oil	*12.0 S[b]	158.6 S	55.0	1.13	5.0	10^3 Gallons Burned	
1-03-004-04	- Grade 5 Oil	*10.0[b]	15[illegible].6 S	55.0	1.13	5.0	10^3 Gallons Burned	
Distillate Oil								
1-03-005-01	- Grades 1 and 2 Oil	2.0	143.6 S	20.0	0.34	5.0	10^3 Gallons Burned	
1-03-005-04	- Grade 4 Oil	7.0	*150.0 S[c]	20.0	0.34	5.0	10^3 Gallons Burned	

[a] Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Natural Gas								
1-03-006-01	Over 100 MMBtu/Hr	3.0	0.6	550.0	1.4	40.0	10^6 Cubic Feet Burned	
1-03-006-02	10-100 MMBtu/Hr	3.0	0.6	140.0	2.8	35.0	10^6 Cubic Feet Burned	
1-03-006-03	Less Than 10 MMBtu/Hr	3.0	0.6	100.0	5.3	20.0	10^6 Cubic Feet Burned	
Process Gas								
1-03-007-01	Sewage Gas		*4.5		*3.0		10^6 Cubic Feet Burned	140
1-03-007-99	Other Not Classified						10^6 Cubic Feet Burned	
Wood/Bark Waste								
1-03-009-01	Bark-Fired Boiler	47.0	0.15	0.68	1.4	4.0	Tons Burned	
1-03-009-02	Wood/Bark-Fired Boiler	7.2	0.15	0.68	1.4	4.0	Tons Burned	
1-03-009-03	Wood-Fired Boiler	8.8	0.15	0.68	1.4	4.0	Tons Burned	
Liquid Petroleum Gas (LPG)								
1-03-010-01	Butane	0.28	*86.5 S[c]	9.4	0.5	1.9	10^3 Gallons Burned	
1-03-010-02	Propane	0.26	*86.5 S[c]	8.8	0.47	1.8	10^3 Gallons Burned	
Solid Waste								
1-03-012-01	Specify Waste Material in Comments		*1.6	*5.9	*2.0		Tons Burned	236
Liquid Waste								
1-03-013-01	Specify Waste Material in Comments				*1.0		10^3 Gallons Burned	236
1-03-013-02	Waste Oil	19.0[e]	*160	*55	*1.0		10^3 Gallons Burned	236
1-03-013-03	Sewage Grease Skimmings						10^3 Gallons Burned	
EXTERNAL COMBUSTION - SPACE HEATERS								
Industrial Space Heaters[c]								
1-05-001-05	Distillate Oil	2.50	144.0 S	18.0	0.7	5.00	10^3 Gallons Burned	
1-05-001-06	Natural Gas	3.00	0.6	100.0	5.3	20.00	10^6 Cubic Feet Burned	
1-05-001-10	Liquified Petroleum Gas (LPG)	1.85	86.5 S	7.5	0.5	1.95	10^3 Gallons Burned	
Commercial Space Heaters								
1-05-002-05	Distillate Oil[c]	2.50	144.0 S	18.0	0.7	5.00	10^3 Gallons Burned	
1-05-002-06	Natural Gas[c]	3.00	0.6	100.0	5.3	20.00	10^6 Cubic Feet Burned	
1-05-002-09	Wood[d]	25.00	0.5	1.0	1.7	150.00	Tons Burned	
1-05-002-10	Liquified Petroleum Gas (LPG)[c]	1.85	86.5 S	7.5	0.5	1.95	10^3 Gallons Burned	
INTERNAL COMBUSTION ENGINES - ELECTRIC GENERATION - 4911								
Distillate Oil (Diesel)								
2-01-001-01	Turbine	5.0	140.0 S	67.8	4.77	15.4	10^3 Gallons Burned	
2-01-001-02	Reciprocating	33.5	31.2	469.0	32.1	102.0	10^3 Gallons Burned	

---

[*] Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Natural Gas								
2-01-002-01	Turbine	14.0	*0.6[c]	413.0	12.6	115.0	10^6 Cubic Feet Burned	
2-01-002-02	Reciprocating	*10.0[d]	0.6	3400.0	82.9	430.0	10^6 Cubic Feet Burned	
Process Gas								
2-01-007-02	Reciprocating				*83		10^6 Cubic Feet Burned	373
Kerosene/Naphtha (Jet Fuel)[c]								
2-01-009-01	Turbine	5.0	6.2	67.8	4.77	15.4	10^3 Gallons Burned	
2-01-009-02	Reciprocating	33.5	6.2	469.0	32.1	102.0	10^3 Gallons Burned	
Geysers/Geothermal								
2-01-010-01	Steam Engine				*NEG		Tons Steam Produced	285
INTERNAL COMBUSTION - INDUSTRIAL								
Distillate Oil (Diesel)								
2-02-001-01	Turbine	5.0	140.0 S	67.8	4.77	15.4	10^3 Gallons Burned	
2-02-001-02	Reciprocating	33.5	31.2	469.0	32.1	102.0	10^3 Gallons Burned	
2-02-001-03	Turbine: Cogeneration	5.0	140.0 S	67.8	4.77	15.4	10^3 Gallons Burned	
2-02-001-04	Engine: Cogeneration	33.5	31.2	469.0	32.1	102.0	10^3 Gallons Burned	
Natural Gas								
2-02-002-01	Turbine	14.0	0.6	300.0	6.9	120.0	10^6 Cubic Feet Burned	
2-02-002-02	Reciprocating	*10.0[d]	0.6	3400.0	82.9	430.0	10^6 Cubic Feet Burned	
2-02-002-03	Turbine: Cogeneration	14.0	0.6	413.0	12.6	115.0	10^6 Cubic Feet Burned	
2-02-002-04	Engine: Cogeneration	*10.0[d]	0.6	3400.0	82.9	430.0	10^6 Cubic Feet Burned	
Gasoline								
2-02-003-01	Reciprocating	6.47	5.31	102.0	*147.7[c]	3,940.0	10^3 Gallons Burned	
Large Bore Engine								
2-02-004-01	Diesel	50.0	*150.0 S[c]	500.0	13.0	130.0	10^3 Gallons Burned	
2-02-004-02	Dual Fuel (Oil/Gas)	*2.2[d]	0.7	18.0	1.5	5.9	10^3 Horsepower-Hours	
2-02-004-03	Dual Fuel (Cogeneration)[d]	*0.035		*31.7	*1.32	*1.05	10^5 Brake HP-Hours	
Residual/Crude Oil[c]								
2-02-005-01	Reciprocating	33.5	155.0 S	469.0	32.1	102.0	10^3 Gallons Burned	
Kerosene/Naphtha (Jet Fuel)[c]								
2-02-009-01	Turbine	5.0	6.2	67.8	4.77	15.4	10^3 Gallons Burned	
2-02-009-02	Reciprocating	33.5	6.2	469.0	32.1	102.0	10^3 Gallons Burned	
Liquified Petroleum Gas (LPG)[d]								
2-02-010-01	Propane: Reciprocating	*5.0	*0.35	*139.0	*83.0	*129.0	10^3 Gallons Burned	
2-02-010-02	Butane: Reciprocating	*5.0	*0.35	*139.0	*83.0	*129.0	10^3 Gallons Burned	

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO$_x$ Lbs/Unit	NO$_x$ Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
INTERNAL COMBUSTION - COMMERCIAL/INSTITUTIONAL								
Distillate Oil (Diesel)								
2-03-001-01	Reciprocating	33.5	31.2	469.0	32.1	102.0	10^3 Gallons Burned	
2-03-001-02	Turbine	5.0	140.0 S	67.8	4.77	15.4	10^3 Gallons Burned	
Natural Gas								
2-03-002-01	Reciprocating	*10.0[d]	0.6	3400.0	82.9	430.0	10^6 Cubic Feet Burned	
2-03-002-02	Turbine	14.0	0.6	413.0	12.6	115.0	10^6 Cubic Feet Burned	
Gasoline								
2-03-003-01	Reciprocating	6.47	5.31	102.0	147.7	3,940.0	10^3 Gallons Burned	
Liquified Petroleum Gas (LPG)[d]								
2-03-010-01	Propane: Reciprocating	*5.0	*0.35	*139.0	*83.0	*129.0	10^3 Gallons Burned	
2-03-010-02	Butane: Reciprocating	*5.0	*0.35	*139.0	*83.0	*129.0	10^3 Gallons Burned	
INTERNAL COMBUSTION - ENGINE TESTING								
Aircraft								
2-04-001-01	Turbojet	11.8	13.0	14.6	46.0	32.7	10^3 Gallons Fuel	
2-04-001-02	Turboshaft	11.8	13.0	14.6	46.0	32.7	10^3 Gallons Fuel	
Turbine[c]								
2-04-003-01	Natural Gas	14.0	0.6	300.0	6.9	120.0	10^6 Cubic Feet Burned	
2-04-003-02	Diesel/Kerosene	5.0	6.2	67.8	4.77	15.4	10^3 Gallons Burned	
Reciprocating[c]								
2-04-004-01	Gasoline	6.47	5.31	102.0	148.0	3,940.0	10^3 Gallons Burned	
2-04-004-02	Diesel/Kerosene	33.5	31.2	469.0	32.1	102.0	10^3 Gallons Burned	
INTERNAL COMBUSTION - FUGITIVE EMISSIONS[f]								
Other Not Classified								
2-88-888-01	Specify in Comments						10^3 Gallons Burned	
2-88-888-02	Specify in Comments						10^6 Cubic Feet Burned	
2-88-888-03	Specify in Comments						10^3 Horsepower-Hours	
CHEMICAL MANUFACTURING - MAJOR GROUP 28								
Adipic Acid - 2869								
3-01-001-01	General	0.9	0.0	53.6	42.7	115.0	Tons of Product	
3-01-001-02	Raw Material Storage	0.0	0.0	0.0	2.2	0.0	Tons of Product	
3-01-001-03	Cyclohexane Oxidation	0.0	0.0	0.0	40.0	115.0	Tons of Product	
3-01-001-04	Nitric Acid Reaction	0.0	0.0	53.0	0.0	0.0	Tons of Product	

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Adipic Acid - 2869 (Continued)								
3-01-001-05	Adipic Acid Refining	0.1	0.0	0.6	0.5	0.0	Tons of Product	
3-01-001-06	Adipic Acid Drying/Loading and Storage	0.8	0.0	0.0	0.0	0.0	Tons of Product	
3-01-001-07	Absorber			*9.5	*0.4		Tons of Product	103
3-01-001-08	Dryer				*NEG		Tons of Product	103
3-01-001-09	Cooler				*NEG		Tons of Product	103
3-01-001-80	Fugitive Emissions: General#				*62,000		Process Unit-Year	1, 2
Ammonia Production - 2873								
3-01-003-05	Feedstock Desulfurization		0.019		7.2	13.8	Tons Produced	
3-01-003-06	Primary Reformer: Natural Gas Fired	0.144	0.0048	5.4	0.012	0.136	Tons Produced	
3-01-003-07	Primary Reformer: Oil Fired	0.9	2.6	5.4	0.38	0.24	Tons Produced	
3-01-003-08	Carbon Dioxide Regenerator	0.0	0.0	0.0	1.04	2.0	Tons Produced	
3-01-003-09	Condensate Stripper	0.0	0.0	0.0	1.2		Tons Produced	
Carbon Black Production - 2895								
3-01-005-01	Channel Process[g]	2,300.0	0.0	0.0	8,943.0	33,500.0	Tons Produced	
3-01-005-02	Thermal Process	0.0	0.0	0.0	0.0	0.0	Tons Produced	
3-01-005-03	Gas Furnace Process[h] (Main Process Vent)	3.2	0.0	0.0	1,400.0	5,300.0	Tons Produced	298
3-01-005-04	Oil Furnace Process (Main Process Vent)	6.53	0.0	0.56	100.0	2,800.0	Tons Produced	
3-01-005-06	Transport Air Vent	0.58	0.0	0.0	0.0	0.0	Tons Produced	
3-01-005-07	Pellet Dryer	0.45	0.1	0.73	*0.3		Tons Produced	166
3-01-005-08	Bagging/Loading	0.06	0.0	0.0	0.0	0.0	Tons Produced	
3-01-005-09	Furnace Process Fugitive Emissions	0.2	0.0	0.0	0.0	0.0	Tons Produced	
Charcoal Manufacture - 2861								
3-01-006-01	General	266.0		24.0	314.0	344.0	Tons Produced	
3-01-006-03	Batch Kiln	266.0		24.0	314.0	344.0	Tons Produced	
3-01-006-04	Continuous Furnace	266.0		24.0	314.0	344.0	Tons Produced	
3-01-006-05	Briquetting	56.0	0.0	0.0	0.0	0.0	Tons Produced	
3-01-006-99	Other Not Classified (Specify in Comments)						Tons Product	
Chloro-Alkali Production - 2812								
3-01-008-01	Liquefaction (Diaphragm Cell Process)		0.0		*0.0		100 Tons Chlorine Liquified	166
3-01-008-02	Liquefaction (Mercury Cell Process)		0.0		*0.0		100 Tons Chlorine Liquified	166

#Note that fugitive emissions are reported in units of lbs/process unit-year rather than lbs/ton product as in the NEDS Source Classification Codes and Emission Factor Listing dated October 1985.

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO$_x$ Lbs/Unit	NO$_x$ Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Chloro-Alkali Production - 2812 (Continued)								
3-01-008-03	Chlorine Loading: Tank Car Vents	0.0	0.0	0.0	0.0	0.0	100 Tons Chlorine Liquified	
3-01-008-04	Chlorine Loading: Storage Tank Vents	0.0	0.0	0.0	0.0	0.0	100 Tons Chlorine Liquified	
3-01-008-05	Air Blowing of Mercury Cell Brine	0.0	0.0	0.0	0.0	0.0	100 Tons Chlorine Liquified	
Cleaning Chemicals - 2841, 2842								
3-01-009-01	Spray Drying: Soaps and Detergents	90.0			*0.06		Tons Produced	3
3-01-009-02	Speciality Cleaners				*1500		Tons Product	3
3-01-009-99	Other Not Classified (Specify in Comments)						Tons Produced	
Explosives - Trinitrotoluene - 2892								
3-01-010-11	Batch Process: Nitration Reactors Fume Recovery			25.0	*NEG		Tons Produced	231
3-01-010-12	Batch Process: Nitration Reactors Acid Recovery			55.0	*NEG		Tons Produced	231
3-01-010-13	Batch Process: Nitric Acid Concentrators			37.0	*NEG		Tons Produced	231
3-01-010-14	Batch Process: Sulfuric Acid Concentrators - Electrostatic Precipitators (Exit)		14.0	40.0	*NEG		Tons Produced	231
3-01-010-15	Batch Process: Red Water Incinerator	25.0	2.0	26.0	*1.1		Tons Produced	231
3-01-010-21	Continuous Process: Nitration Reactors - (Fume Recovery)			8.0	*NEG		Tons Produced	231
3-01-010-22	Continuous Process: Nitration Reactors - (Acid Recovery)			3.0	*NEG		Tons Produced	231
3-01-010-23	Continuous Process: Red Water Incinerator	0.25	0.24	7.0	*1.1		Tons Produced	231
3-01-010-30	Open Burning: Waste	180.0		150.0	1.1	56.0	Tons TNT Burned	
Hydrochloric Acid - 2819								
3-01-011-01	By-Product Process		0.0	*0.0	*0.0		Tons Final Acid	167
3-01-011-98	Handling and Storage (99.9% Removal)						10^3 Gallons Acid	
Hydrofluoric Acid - 2819								
3-01-012-02	Rotary Kiln (Acid Reactor)	0.0	*2.7	*0.07	*0.02		Tons Acid Produced	201, 107
3-01-012-03	Fluorspar Grinding/Drying	75.0	*0.0	*0.15	*0.0		Tons Fluorspar	209, 317, 368
3-01-012-04	Fluorspar Handling Silos	60.0	0.0	0.0	0.0	0.0	Tons Fluorspar	
3-01-012-05	Fluorspar Transfer	6.0	0.0	0.0	0.0	0.0	Tons Fluorspar	
3-01-012-06	Tail Gas Vent		45.0				Tons Acid Produced	

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Nitric Acid - 2873								
3-01-013-01	Absorber Tail Gas (Pre-1970 Facilities)		*0.0	43.0	*0.0		Tons Pure Acid Produced	4, 317
3-01-013-02	Absorber Tail Gas (Post-1970 Facilities)		*0.0	1.8	*0.0		Tons Pure Acid Produced	4, 317
3-01-013-03	Nitric Acid Concentration (Pre-1970 Facilities)		*0.0	10.0	*0.0		Tons Pure Acid Produced	4, 317
3-01-013-04	Nitric Acid Concentration (Post-1970 Facilities)		*0.0	10.0	*0.0		Tons Pure Acid Produced	4, 317
Paint Manufacture - 2851[i]								
3-01-014-01	General Mixing and Handling	*5.5[d]	0.0	0.0	30.0	0.0	Tons Paint Produced	
3-01-014-02	Pigment Handling	20.0	0.0	0.0	0.0	0.0	Tons Pigment Processed	
3-01-014-99	Other Not Classified (Specify in Comments)						Tons Product	
Varnish Manufacture - 2851								
3-01-015-01	Bodying Oil		*0.0	*NEG	40.0		Tons Produced	316
3-01-015-02	Oleoresinous		*0.0	*NEG	150.0		Tons Produced	316
3-01-015-03	Alkyd		*0.0	*NEG	160.0		Tons Produced	316
3-01-015-05	Acrylic		*0.0	*NEG	20.0		Tons Produced	316
3-01-015-99	Other Not Classified (Specify in Comments)						Tons Produced	
Phosphoric Acid: Wet Process - 2874								
3-01-016-01	Reactor	0.0	*0.0	*0.0	*0.0		Tons Phosphate Rock	72, 167
3-01-016-02	Gypsum Pond	0.0	*0.0		*NEG		Tons Phosphate Rock	72
3-01-016-03	Condenser	0.0	*0.0		*NEG		Tons Phosphate Rock	72
Phosphoric Acid: Thermal Process - 2874								
3-01-017-02	Absorber: General		*0.0	*NEG	*NEG		Tons Phosphorous Burned	72, 161
3-01-017-03	Absorber with Packed Tower	2.14	*0.0	*NEG	*NEG		Tons P_2O_5 Produced	72, 161
3-01-017-04	Absorber with Venturi Scrubber	2.53	*0.0	*NEG	*NEG		Tons P_2O_5 Produced	72, 161
3-01-017-05	Absorber with Glass Mist Eliminator	0.69	*0.0	*NEG	*NEG		Tons P_2O_5 Produced	72, 161
3-01-017-06	Absorber with Wire Mist Eliminator	5.46	*0.0	*NEG	*NEG		Tons P_2O_5 Produced	72, 161
3-01-017-07	Absorber with High-pressure Mist Eliminator	0.11	*0.0	*NEG	*NEG		Tons P_2O_5 Produced	72, 161
3-01-017-08	Absorber with Electrostatic Precipitator	1.66	*0.0	*NEG	*NEG		Tons P_2O_5 Produced	72, 161
Plastics Production - Specific Products - 2821[j]								
3-01-018-01	Polyvinyl Chlorides and Copolymers	35.0	*0.025	*200	17.0		Tons Product	149, 203
3-01-018-02	Polypropylene and Copolymers	3.0		*131	0.7		Tons Product	141
3-01-018-03	Ethylene-Propylene Copolymers						Tons Product	

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO$_x$ Lbs/Unit	NO$_x$ Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Plastics Production - Specific Products - 2821 (Continued)[J]								
3-01-018-05	- Phenolic Resins				*14.6		Tons Product	85
3-01-018-07	- Polyethylene (High Density)				*36		Tons Product	50
3-01-018-08	- Monomer and Solvent Recovery		*0.0	*0.0	*25.4		Tons Product	178, 316
3-01-018-09	- Extruder		*0.0	*0.0	*11.0		Tons Product	5, 316
3-01-018-10	- Conveying		*0.0	*0.0	*0.46		Tons Product	178, 316
3-01-018-11	- Storage		*0.0	*0.0	*0.01		Tons Product	178, 316
3-01-018-12	- Polyethylene (Low Density)				*7.7		Tons Product	85
3-01-018-13	- Recovery and Purification System		*0.0	*0.0	*60.0		Tons Product	5, 316
3-01-018-14	- Extruder		*0.0	*0.0	*60.0		Tons Product	5, 316
3-01-018-15	- Pellet Silo		*0.0	*0.0	*NEG		Tons Product	5, 316
3-01-018-16	- Transfer/Handling/Loading/Packing		*0.0	*0.0	*0.0		Tons Product	5, 316
3-01-018-17	- Polystyrene				*11.1		Tons Product	87
3-01-018-18	- Reactor				*NEG		Tons Product	5
3-01-018-19	- Solvent Recovery		*0.0	*0.0	*1.6		Tons Product	179, 316
3-01-018-20	- Polymer Drying				*NEG		Tons Product	5
3-01-018-21	- Extruding/Pelletizing/Conveying/ Storage		*0.0	*0.0	*NEG		Tons Product	5, 316
3-01-018-22	- Acrylic Resins				*1.2		Tons Product	87
3-01-018-27	- Polyamide Resins			*1.0	*1.6		Tons Product	85, 141
3-01-018-32	- Urea-Formaldehyde Resins				*20.0		Tons Product	3
3-01-018-37	- Polyester Resins: General				*0.5		Tons Product	87
3-01-018-38	- Polyester/Alkyd Resins: Reactor Kettle		0.0	0.0	*4.8	0.0	Tons Resin Produced	88
3-01-018-39	- Polyester/Alkyd Resins: Resin Thinning Tank	0.0	0.0	0.0	*6.7	0.0	Tons Thinning Solvent Used	88
3-01-018-40	- Polyester/Alkyd Resins: Resin Storage Tank	0.0	0.0	0.0	*11.1	0.0	10^3 Gallons Thinned Resin Stored	88
3-01-018-42	- Melamine Resins				*50.0		Tons Product	5
3-01-018-47	- Epoxy Resins				*6.8		Tons Product	7
3-01-018-49	- Acrylonitrile-Butadiene-Styrene (ABS) Resin				*60		Tons Produced	5
3-01-018-52	- Polyfluorocarbons						Tons Product	
Polyethylene - 2821[J]								
3-01-018-60	- Recovery System				*40		Tons Product	50
3-01-018-61	- Purification System				*30		Tons Product	50
3-01-018-63	- Extruder		0.0	0.0	*30		Tons Product	50, 316
3-01-018-64	- Pellet Silo/Storage		0.0	0.0	*NEG		Tons Product	50, 316
3-01-018-65	- Transfer/Conveying		0.0	0.0	*0.0		Tons Product	310, 316
3-01-018-66	- Packing/Shipping		0.0	0.0	*0.0		Tons Product	310, 316
Polyether Resins - 2821[J]								
3-01-018-70	- Reactor				*50		Tons Product	5
3-01-018-71	- Blowing Agent - Freon				*NEG		Tons Product	339
3-01-018-72	- Miscellaneous						Tons Product	

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Polyurethane - 2821[j]								
3-01-018-80	Reactor				*52		Tons Product	5
3-01-018-81	Blowing Agent - Freon				*NEG		Tons Agent Used	339
3-01-018-82	Blowing Agent - Methylene Chloride				*NEG		Tons Agent Used	339
3-01-018-83	Transfer/Conveying/Storage		*0.0	*0.0	*0.0		Tons Product	310, 316
3-01-018-84	Packaging/Shipping		*0.0	*0.0	*0.0		Tons Product	310, 316
3-01-018-85	Other Not Classified (Specify in Comments)						Tons Product	
Plastics Production - General Processes - 2821[j]								
3-01-018-90	Catalyst Preparation				*0.47		Tons Product	86
3-01-018-91	Reactor Vents				*0.4		Tons Product	88
3-01-018-92	Separation Processes				*2.0		Tons Product	143
3-01-018-93	Raw Material Storage		*0.0	*0.0	*0.034		Tons Raw Material	86, 316
3-01-018-94	Solvent Storage		*0.0	*0.0	*0.018		Tons Solvent	88, 316
3-01-018-99	Other Not Classified (Specify in Comments)						Tons Product	
Phthalic Anhydride - 2865								
3-01-019-01	o-Xylene Oxidation: Main Process Stream (Reactor Condensers)	138.0	9.4	0.0	0.0	301.0	Tons Produced	
3-01-019-02	o-Xylene Oxidation: Pre-treatment	13.0	0.0	0.0	0.0	0.0	Tons Produced	
3-01-019-04	o-Xylene Oxidation: Distillation	89.0	0.0	0.0	2.4	0.0	Tons Produced	
3-01-019-05	Naphthalene Oxidation: Main Process Stream (Reactor/ Condensers)	56.0	0.0	0.0	0.0	100.0	Tons Produced	
3-01-019-06	Naphthalene Oxidation: Pre-treatment	5.0	0.0	0.0	0.0	0.0	Tons Produced	
3-01-019-07	Naphthalene Oxidation: Distillation	38.0	0.0	0.0	10.0	0.0	Tons Produced	
Printing Ink Manufacture - 2893								
3-01-020-01	Vehicle Cooking: General	0.0			120.0		Tons Produced	
3-01-020-02	Vehicle Cooking: Oils	0.0			40.0		Tons Produced	
3-01-020-03	Vehicle Cooking: Oleoresin	0.0			150.0		Tons Produced	
3-01-020-04	Vehicle Cooking: Alkyds	0.0			160.0		Tons Produced	
3-01-020-05	Pigment Mixing	2.0			*6.2		Tons Pigment	3
Sodium Carbonate - 2812								
3-01-021-01	Solvay Process: NH_3 Recovery	0.0			*0.0		Tons Produced	8
3-01-021-02	Solvay: Handling	50.0			*0.0		Tons Produced	8
3-01-021-03	Trona Crushing/Screening		*0.0	*0.0	*0.0		Tons Ore Processed	8, 80
3-01-021-04	Calciner: Gas-Fired	368.0	*0.0		*0.2		Tons Ore Processed	8, 80
3-01-021-05	Calciner: Coal-Fired	390.0	*0.01[d]	*2.45	*0.07		Tons Ore Processed	8, 80

[*] Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Sodium Carbonate - 2812 (Continued)								
3-01-021-06	Rotary Dryer: Gas-Fired	67.0	*0.0		*0.0		Tons Product	8, 80
3-01-021-07	Fluid Bed Dryer: Indirect Heated	146.0	*0.0	*0.0	*0.0		Tons Product	8, 80
3-01-021-08	Dissolver		*0.0	*0.0	*0.0		Tons Product	8, 80
3-01-021-12	Rotary Predryer	3.1			*0.0		Tons Dry $NaHCO_3$ Feed	8
3-01-021-13	Bleacher: Gas-Fired	311.0			*0.0		Tons Dry Feed	8
3-01-021-99	Other Not Classified (Specify in Comments)						Tons Produced	
Sulfuric Acid, Chamber Process - 2819								
3-01-022-01	General				0.0		Tons of Pure Acid Produced	
Sulfuric Acid - Contact Process - 2819								
3-01-023-01	Absorber/@ 99.9% Conversion	*2.5^k	4.0	*0.004	*0.0		Tons 100% H_2SO_4	9, 204
3-01-023-04	Absorber/@ 99.5% Conversion	*2.5^k	7.0	*0.004	*0.0		Tons 100% H_2SO_4	9, 204
3-01-023-06	Absorber/@ 99.0% Conversion	*2.5^k	14.0	*0.004	*0.0		Tons 100% H_2SO_4	9, 204
3-01-023-08	Absorber/@ 98.0% Conversion	*2.5^k	27.0	*0.004	*0.0		Tons 100% H_2SO_4	9, 204
3-01-023-10	Absorber/@ 97.0% Conversion	*2.5^k	40.0	*0.004	*0.0		Tons 100% H_2SO_4	9, 204
3-01-023-12	Absorber/@ 96.0% Conversion	*2.5^k	55.0	*0.004	*0.0		Tons 100% H_2SO_4	9, 204
3-01-023-14	Absorber/@ 95.0% Conversion	*2.5^k	70.0	*0.004	*0.0		Tons 100% H_2SO_4	9, 204
3-01-023-16	Absorber/@ 94.0% Conversion	*2.5^k	82.0	*0.004	*0.0		Tons 100% H_2SO_4	9, 204
3-01-023-18	Absorber/@ 93.0% Conversion	*2.5^k	96.0	*0.004	*0.0		Tons 100% H_2SO_4	9, 204
3-01-023-19	Concentrator				*0.0		Tons 100% H_2SO_4	9
3-01-023-20	Tank Car and Truck Unloading		*0.1		*0.0		Tons 100% H_2SO_4 Loaded	9, 146
3-01-023-21	Storage Tank Vents		*0.1		*0.0		Tons 100% H_2SO_4 Stored	9, 122
3-01-023-22	Leaks in Process Equipment				*0.0		Tons 100% H_2SO_4	9
Synthetic Organic Fiber Production - Specific Products - 2824								
3-01-024-01	Polyamide (e.g., Nylon)		*NEG	*NEG	7.0		Tons Fiber	316
3-01-024-02	Polyesters (e.g., Dacron)				*90		Tons Fiber	75
3-01-024-05	Polyfluorocarbons (e.g., Teflon)						Tons Product	
3-01-024-10	Acrylics (e.g., Orlon)				*90		Tons Product	110
3-01-024-14	Polyolefins (e.g., Polypropylene)				*73.0		Tons Product	10
3-01-024-15	Vinyls (e.g., Saran)						Tons Product	
3-01-024-16	Aramid				*7		Tons Product	75
Synthetic Organic Fiber Production - General Processes - 2824								
3-01-024-21	Dope Preparation			*0.0	10		Tons Product	110, 316
3-01-024-22	Filtration			*0.0	*6.0		Tons Product	111, 316
3-01-024-23	Fiber Extrusion			*0.0	10		Tons Product	110, 316
3-01-024-24	Washing/Drying/Finishing			*0.0	*96		Tons Product	112, 316
3-01-024-25	Fiber Storage		*0.0	*0.0	*NEG		Tons Product	110, 316
3-01-024-26	Equipment Cleanup		*0.0	*0.0	*NEG		Tons Product	110, 316
3-01-024-27	Solvent Storage		*0.0	*0.0	*34		Tons Solvent	113, 316

[*] Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Cellulosic Fiber Production - 2823								
3-01-025-01	Viscose (e.g., Rayon)				0.0		Tons Fiber	
3-01-025-05	Acetate				*290		Tons Produced	110
Synthetic Rubber Production (Manufacturing Only) - 2822								
3-01-026-01	General				83.0		Tons Product	
3-01-026-02	Butyl (Isobutylene)						Tons Product	
3-01-026-08	Acrylonitrile				*20.0		Tons Product	200
3-01-026-09	Dryers				5.0		Tons Product	
3-01-026-10	Blowdown Tank				*NEG		Tons Product	368
3-01-026-11	Steam Stripper				*NEG		Tons Product	114
3-01-026-12	Prestorage Tank				*NEG		Tons Product	114
3-01-026-13	Monomer Recovery (Absorber Vent)				0.52		Tons Product	
3-01-026-14	Blending Tanks				0.84		Tons Product	
3-01-026-15	Isoprene						Tons Product	
3-01-026-16	Latex: Monomer Removal				17.0		Tons Product	
3-01-026-17	Latex: Blending Tank				0.2		Tons Product	
3-01-026-25	Chloroprene						Tons Product	
3-01-026-30	Silicone Rubber						Tons Product	
3-01-026-99	Other Not Classified (Specify in Comments)						Tons Product	
Ammonium Nitrate Production - 2873								
3-01-027-04	Neutralizer	4.35			*0.0		Tons Produced	11
3-01-027-07	Rotary Drum Granulator	292.0			*0.0		Tons Produced	11
3-01-027-08	Pan Granulator	2.68			*0.0		Tons Produced	11
3-01-027-09	Bulk Loading (General)	0.02			*0.0		Tons Produced	11
3-01-027-10	Bagging Product	0.19			*0.0		Tons Produced	11
3-01-027-11	Neutralizer (High Density)	4.35			*0.0		Tons Produced	11
3-01-027-12	Prilling Tower (High Density)	3.18			*0.0		Tons Produced	11
3-01-027-14	Prill Coolers (High Density)	1.6			*0.0		Tons Produced	11
3-01-027-17	Evaporator/Concentrator (High Density)	0.52			*0.0		Tons Produced	11
3-01-027-18	Coating (High Density)	4.0			*0.0		Tons Produced	11
3-01-027-20	Solids Screening				*0.0		Tons Produced	11
3-01-027-21	Neutralizer (Low Density)	4.35			*0.0		Tons Produced	11
3-01-027-22	Prilling Towers (Low Density)	0.92			*0.0		Tons Produced	11
3-01-027-24	Prill Coolers (Low Density)	51.6			*0.0		Tons Produced	11
3-01-027-25	Prill Dryer (Low Density)	114.4			*0.0		Tons Produced	11
3-01-027-27	Evaporator/Concentrator (Low Density)	0.52			*0.0		Tons Produced	11
3-01-027-28	Coating (Low Density)	4.0			*0.0		Tons Produced	11
3-01-027-29	Rotary Drum Granulator Coolers	16.2			*0.0		Tons Produced	11
3-01-027-30	Pan Granulator Cooler	36.6			*0.0		Tons Produced	11

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Normal Superphosphate - 2874								
3-01-028-01	Grinding and Drying	9.0	0.0	0.0	0.0	0.0	Tons Produced	
3-01-028-03	Rock Unloading	0.56	0.0	0.0	0.0	0.0	Tons P_2O_5 Produced	
3-01-028-04	Rock Feeder System	0.11	0.0	0.0	0.0	0.0	Tons P_2O_5 Produced	
3-01-028-05	Mixer/Den	0.52	0.0	0.0	0.0	0.0	Tons P_2O_5 Produced	
3-01-028-06	Curing Building	7.2	0.0	0.0	0.0	0.0	Tons P_2O_5 Produced	
3-01-028-07	Bagging/Handling		0.0	0.0	0.0	0.0	Tons P_2O_5 Produced	
3-01-028-20	Mixing				0.0		Tons Fertilizer Produced	
3-01-028-21	Den				*NEG		Tons Fertilizer Produced	72
3-01-028-22	Curing				*NEG		Tons Fertilizer Produced	72
3-01-028-23	Ammoniator/Granulator				*NEG		Tons Fertilizer Granulated	72
3-01-028-24	Dryer				*NEG		Tons Fertilizer Granulated	72
3-01-028-25	Cooler				*NEG		Tons Fertilizer Granulated	72
Triple Superphosphate (Also Called Double or Concentrated Superphosphate) - 2874								
3-01-029-03	Rock Unloading	0.16	0.0	0.0	0.0	0.0	Tons P_2O_5 Produced	
3-01-029-04	Rock Feeder System	0.03	0.0	0.0	0.0	0.0	Tons P_2O_5 Produced	
3-01-029-05	Run-of-Pile: Mixer/Den/Curing	0.03	0.0	0.0	0.0	0.0	Tons P_2O_5 Produced	
3-01-029-06	Granular: Reactor/Dryer	0.1			*NEG		Tons P_2O_5 Produced	72
3-01-029-07	Granular: Curing	0.2	0.0	0.0	0.0	0.0	Tons P_2O_5 Produced	
3-01-029-08	Bagging/Handling		0.0	0.0	0.0	0.0	Tons P_2O_5 Produced	
3-01-029-20	Mixing				*NEG		Tons Fertilizer Produced	72
3-01-029-21	Den				*NEG		Tons Fertilizer Produced	72
3-01-029-22	Curing				*NEG		Tons Fertilizer Produced	72
3-01-029-23	Ammoniator/Granulator				*NEG		Tons Fertilizer Granulated	72
3-01-029-24	Dryer				*NEG		Tons Fertilizer Granulated	72
3-01-029-25	Cooler				*NEG		Tons Fertilizer Granulated	72
Ammonium Phosphates - 2874								
3-01-030-01	Dryers and Coolers	1.5	*3.1	*1.7	*0.03		Tons P_2O_5 Produced	205
3-01-030-02	Ammoniator/Granulator	1.52	*0.3	*NEG	*NEG		Tons P_2O_5 Produced	72, 122, 303
3-01-030-03	Screening/Transfer	0.06	0.0	0.0	0.0	0.0	Tons P_2O_5 Produced	
3-01-030-04	Bagging/Handling		0.0	0.0	0.0	0.0	Tons P_2O_5 Produced	
3-01-030-20	Mixing				*NEG		Tons Fertilizer Produced	72
3-01-030-21	Den		*NEG	*NEG	*NEG		Tons Fertilizer Produced	72, 316
3-01-030-22	Curing				*NEG		Tons Fertilizer Produced	72
3-01-030-23	Ammoniator/Granulator		*0.0	*0.0	*NEG		Tons Fertilizer Produced	72, 121
3-01-030-24	Dryer		*0.0	*0.0	*NEG		Tons P_2O_5 Produced	72, 121
3-01-030-25	Cooler		*0.0	*0.0	*NEG		Tons P_2O_5 Produced	72, 121
Terephthalic Acid/Dimethyl Terephthalate - 2869								
3-01-031-01	HNO_3 - Paraxylene - General		0.0	*0.06	39.6	38.0	Tons Produced	109
3-01-031-02	Reactor Vent		0.0	*0.0	30.0	34.0	Tons Produced	295
3-01-031-03	Crystallization, Separation and Drying Vent		0.0	*0.0	3.8	0.0	Tons Produced	295

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Terephthalic Acid/Dimethyl Terephthalate - 2869 (Continued)								
3-01-031-04	Distillation and Recovery Vent		0.0	*0.0	2.2	0.0	Tons Produced	295
3-01-031-05	Product Transfer Vent		0.0	*0.0	3.6	4.0	Tons Produced	295
3-01-031-99	Other Not Classified (Specify in Comments)						Tons Produced	
Elemental Sulfur Production - 2819[1]								
3-01-032-01	Modified Claus: 2 Stage without Control (92-95% Removal)		280.0	*0.35	*3.0		Tons 100% Sulfur	141
3-01-032-02	Modified Claus: 3 Stage without Control (95-96% Removal)		189.0	*0.1	*2.1		Tons 100% Sulfur	12, 142
3-01-032-03	Modified Claus: 4 Stage without Control (96-97% Removal)		145.0	*0.1	*2.1		Tons 100% Sulfur	12, 142
3-01-032-04	Sulfur Removal Process (99.9% Removal)		4.0	*0.1	*2.1		Tons 100% Sulfur	12, 142
Pesticides - 2879								
3-01-033-01	Malathion				*0.05		Gallons of Product	7
3-01-033-11	Agricultural Pesticides: General						Gallons Stored	
3-01-033-12	Agricultural Pesticides: General						Pounds Stored	
3-01-033-99	Other Not Classified (Specify in Comments)						Tons Produced	
Amines/Amides Production - 2869								
Aniline - 2869								
3-01-034-02	General						Tons Produced	
3-01-034-03	Reactor Recycle Purge Vent				*0.2		Tons Product	13
3-01-034-04	Dehydration Column Vent				*0.2		Tons Product	27
3-01-034-05	Purification Column Vent				*0.2		Tons Product	27
3-01-034-06	Fugitive Emissions: General#						Process Unit-Year	
Ethanolamines - 2869								
3-01-034-10	General						Tons Produced	
3-01-034-11	Ammonia Scrubber Vent				*0.0		Tons Product	13
3-01-034-12	Vacuum Distillation - Jet Vent				*0.0		Tons Product	13
3-01-034-14	Fugitive Emissions: General#						Process Unit-Year	
3-01-034-15	Ethylenediamine				*0.4		Tons Produced	306
3-01-034-20	Hexamethylenediamine				*0.4		Tons Produced	6
3-01-034-25	Hexamethylenetetramine				*0.4		Tons Produced	306
3-01-034-30	Melamine				*0.4		Tons Produced	306

Note that fugitive emissions are reported in units of lbs/process unit-year rather than lbs/ton product as in the NEDS Source Classification Codes and Emission Factor Listing dated October 1985.

* Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Ethanolamines - 2869 (Continued)								
3-01-034-35	Methylamines				*0.4		Tons Produced	306
3-01-034-99	Other Not Classified (Specify in Comments)						Tons Produced	
Inorganic Pigments - 2816								
3-01-035-01	TiO_2 Sulfate Process: Calciner[d]	230.0	8.0		*0.0		Tons Produced	70
3-01-035-02	TiO_2 Sulfate Process: Digestor[d]		*3.6		*0.0		Tons Produced	70, 128
3-01-035-03	TiO_2 Chloride Process: Reactor[d]				*0.0	220.0	Tons Produced	70
3-01-035-06	Lead Oxide: Barton Pot	0.64			*0.0		Tons Produced	70
3-01-035-07	Lead Oxide: Calcining Furnace	15.0			*0.0		Tons Produced	70
3-01-035-10	Red Lead	1.0			*0.0		Tons Produced	70
3-01-035-15	White Lead	0.69			*0.0		Tons Produced	70
3-01-035-20	Lead Chromate	0.2			*0.0		Tons Produced	70
3-01-035-50	Ore Grinding		0.0	0.0	0.0	0.0	Tons Produced	
3-01-035-51	Ore Dryer	8.0	0.0	0.0	0.0	0.0	Tons Produced	
3-01-035-52	Pigment Milling		0.0	0.0	0.0	0.0	Tons Produced	
3-01-035-53	Pigment Dryer		0.0	0.0	0.0	0.0	Tons Produced	
3-01-035-54	Conveying/Storage/Packing		0.0	0.0	0.0	0.0	Tons Produced	
3-01-035-99	Other Not Classified (Specify in Comments)						Tons Produced	
Sodium Bicarbonate - 2812								
3-01-038-01	General						Tons Product	
Hydrogen Cyanide - 2819								
3-01-039-01	General				*14.0		Tons Product	14
3-01-039-02	Ammonia Absorber				*NEG		Tons Product	285
3-01-039-03	HCN Absorber				*NEG		Tons Product	285
Urea Production - 2873								
3-01-040-01	General: Specify in Comments				*0.0		Tons Product	15
3-01-040-02	Solution Concentration (Controlled)	0.0214			*0.0		Tons Produced	15
3-01-040-03	Prilling	3.8			*0.0		Tons Produced	15
3-01-040-04	Drum Granulation	241.0			*0.009		Tons Produced	15
3-01-040-05	Solid Product: Coating	4.0			*0.0		Tons Produced	15
3-01-040-06	Solid Product: Bagging	0.19			*0.0		Tons Produced	15
3-01-040-07	Bulk Loading	0.02			*0.0		Tons Produced	15
3-01-040-08	Non-Fluidized Bed Prilling (Agricultural Grade)	3.8			*0.0		Tons Produced	15
3-01-040-09	Non-Fluidized Bed Prilling (Feed Grade)	3.6			*0.0		Tons Produced	15
3-01-040-10	Fluidized Bed Prilling (Agricultural Grade)	6.2			*0.02		Tons Produced	15

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Urea Production - 2873 (Continued)								
3-01-040-11	Fluidized Bed Prilling (Feed Grade)	3.6			*0.04		Tons Produced	15
3-01-040-12	Rotary Drum Cooler	7.45			*0.0		Tons Produced	15
3-01-040-13	Solids Screening				*0.0		Tons Produced	15
Nitrocellulose - 2892								
3-01-041-01	Nitration Reactors	0.0	1.4	14.0	0.0	0.0	Tons Produced	
3-01-041-02	Sulfuric Acid Concentrator	0.0	68.0	0.0	0.0	0.0	Tons Produced	
3-01-041-03	Boiling Tubs	0.0	0.0	2.0	0.0	0.0	Tons Produced	
3-01-041-04	Nitric Acid Concentrator	0.0	0.0	14.0	0.0	0.0	Tons Produced	
Lead Alkyl Manufacture - (Sodium/Lead Alloy Process) - 2869								
3-01-042-01	Recovery Furnace	63.5	*0.0	*2.67	*0.0		Tons Produced	168
3-01-042-02	Process Vents (Tetraethyl Lead)	6.25			*0.0		Tons Produced	168
3-01-042-03	Process Vents (Tetramethyl Lead)	193.5	*0.0	*0.0	*0.0		Tons Produced	168
3-01-042-04	Sludge Pits	1.9					Tons Produced	
Lead Alkyl Manufacture - (Electrolytic Process) - 2869								
3-01-043-01	General	1.4	*0.0		*0.0		Tons Produced	168
Organic Fertilizer - 2873								
3-01-045-01	General: Mixing/Handling		*0.0	*0.0	*0.0		Tons Processed	169
Pharmaceutical Preparations - 2834								
3-01-060-01	Vacuum Dryers				*0.47		Hundreds of Lbs. of Product	77
3-01-060-02	Reactors				*NEG		Hundreds of Lbs. of Product	286
3-01-060-03	Distillation Units				*11.8		Hundreds of Lbs. of Product	77
3-01-060-04	Filters				*0.09		Hundreds of Lbs. of Product	78
3-01-060-05	Extractors				*0.006		Hundreds of Lbs. of Product	78
3-01-060-06	Centrifuges				*0.006		Hundreds of Lbs. of Product	286
3-01-060-07	Crystallizers				*0.006		Hundreds of Lbs. of Product	286
3-01-060-08	Exhaust Systems				*0.006		Hundreds of Lbs. of Product	286
3-01-060-09	Air Dryers				*1.7		Hundreds of Lbs. of Product	143
3-01-060-10	Storage/Transfer				*0.07		Hundreds of Lbs. of Product	77
3-01-060-11	Coating Process				200		Tons Solvent in Coating	286
3-01-060-12	Granulation Process				200		Tons Solvent Consumed	286
3-01-060-99	Other Not Classified (Specify in Comments)						Hundreds of Lbs. of Product	
Industrial Inorganic Chemical Production - General Processes - 2812-2819								
3-01-070-01	Fugitive Leaks				*0.0		Tons Product	3
3-01-070-02	Storage/Transfer				*0.0		Tons Product	7

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Ketone Production - 2869								
3-01-091-05 -	Methyl Ethyl Ketone (MEK)				*11.6		Tons Produced	105
3-01-091-10 -	Methyl Isobutyl Ketone (MIBK)						Tons Produced	
Acetone - 2869								
3-01-091-01 -	Acetone: General						Tons Produced	
3-01-091-51 -	Cumene Oxidation			*0.0	*7.6		Tons Product	108
3-01-091-52 -	CHP Concentrator				*4.2		Tons Product	108
3-01-091-53 -	Light-ends Distillation Vent			*0.0	*0.6		Tons Product	108
3-01-091-54 -	Acetone Finishing Column			*0.0	*1.3		Tons Product	108
3-01-091-80 -	Fugitive Emissions: General#				*450,000		Process Unit-Year	1, 2
Ketone Production - 2869								
3-01-091-99 -	Other Not Classified (Specify in Comments)						Tons Produced	
Maleic Anhydride - 2865								
3-01-100-02 -	Product Recovery Absorber			*0.1	174.0	1,360.0	Tons Produced	165
3-01-100-03 -	Vacuum System Vent		*0.0	*0.0	*0.2		Tons Produced	125
3-01-100-04 -	Briquetting				*0.0		Tons Produced	16
3-01-100-05 -	Secondary Sources (Dehydration Column, Vacuum System, Fractionation Column)		*0.0	*0.0	*0.2		Tons Produced	125
3-01-100-99 -	Other Not Classified (Specify in Comments)						Tons Produced	
Elemental Phosphorous - 2819								
3-01-112-01 -	Calciner				*NEG		Tons Processed	89
3-01-112-02 -	Furnace				*NEG		Tons Processed	89
3-01-112-99 -	Other Not Classified						Tons Product	
Aldehydes Production - 2869								
Formaldehyde - 2869								
3-01-120-01 -	Formaldehyde: Silver Catalyst		*0.0	*0.0	*13.0		Tons Produced	14, 156
3-01-120-02 -	Formaldehyde: Mixed Oxide Catalyst				*16.0		Tons Produced	14
3-01-120-05 -	Absorber Vent				*2.2		Tons Product	16
3-01-120-06 -	Fractionator Vent				*0.1		Tons Product	16
3-01-120-07 -	Fugitive Emissions: General#				*36,000		Process Unit-Year	1, 2

#Note that fugitive emissions are reported in units of lbs/process unit-year rather than lbs/ton product as in the NEDS Source Classification Codes and Emission Factor Listing dated October 1985.

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Acetaldehyde - 2869								
3-01-120-11	Acetaldehyde from Ethylene		*0.0	*0.0	*2.8		Tons Produced	14, 82
3-01-120-12	Acetaldehyde from Ethanol		*NEG	*0.0	*0.04		Tons Produced	14, 82
3-01-120-13	Off-Air Absorber Vent				*4.5		Tons Product	17
3-01-120-14	Off-Gas Absorber Vent				*5.6		Tons Product	17
3-01-120-17	Fugitive Emissions: General#				*165,000		Process Unit-Year	1, 2
Butyraldehyde - 2869								
3-01-120-21	General				*240.0		Tons Produced	13
Acrolein - 2869								
3-01-120-31	CO_2 Stripping Tower				*120.0		Tons Product	18
3-01-120-32	Aqueous Acrolein Receiver				*6.0		Tons Product	18
3-01-120-33	Distillation System				*54.0		Tons Product	18
3-01-120-34	Refrigeration Unit				*54.0		Tons Product	18
3-01-120-37	Fugitive Emissions: General#						Process Unit-Year	
3-01-120-99	Other Not Classified (Specify in Comments)						Tons Product	
Organic Dyes/Pigments - 2865								
3-01-121-99	Other Not Classified (Specify in Comments)						Tons Produced	
Chloroprene - 2869								
3-01-124-01	General						Tons Product	
3-01-124-02	Butadiene Dryer				*2.4		Tons Product	19
3-01-124-03	Chlorination Reactor				*0.47		Tons Product	19
3-01-124-04	Dichlorobutene Still				*7.8		Tons Product	19
3-01-124-05	Isomerization and 3,4-DCB Recovery Vent				*0.3		Tons Product	19
3-01-124-06	Chloroprene Stripper				*0.3		Tons Product	19
3-01-124-07	Brine Stripper				*0.3		Tons Product	19
3-01-124-80	Fugitive Emissions: General#						Process Unit-Year	
Organohalogens Production - 2869								
Ethylene Dichloride - 2869								
3-01-125-01	Ethylene Dichloride via Oxychlorination		*0.0	*0.0	*24.1		Tons Produced	83, 156
3-01-125-02	Ethylene Dichloride via Direct Chlorination				*1.3		Tons Produced	83
3-01-125-04	Caustic Scrubber				*0.0		Tons Product	13

#Note that fugitive emissions are reported in units of lbs/process unit-year rather than lbs/ton product as in the NEDS Source Classification Codes and Emission Factor Listing dated October 1985.

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO Lbs/Unit	NO Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Ethylene Dichloride - 2869 (Continued)								
3-01-125-05	Reactor Vessel				*0.0		Tons Product	13
3-01-125-06	Distillation Unit				*0.0		Tons Product	13
3-01-125-09	Fugitive Emissions: General#				*180,000		Process Unit-Year	1, 2
Chloromethanes - 2869								
3-01-125-10	General		*NEG	*0.0	*12.3		Tons Produced	269
3-01-125-11	Recycled Methane Inert-Purge		*NEG	*0.0	*4.2		Tons Product	269
3-01-125-12	Drying Bed Regeneration Vent		*NEG	*0.0	*0.1		Tons Product	269
3-01-125-14	Fugitive Emissions: General#		*NEG	*0.0	*482,000		Process Unit-Year	1, 2, 269
Ethyl Chloride - 2869								
3-01-125-15	Ethyl Chloride: General				*0.0		Tons Produced	13
Perchloroethylene - 2869								
3-01-125-20	General		*0.0	*0.0	*3.5		Tons Produced	20, 267
3-01-125-21	Distillation Vent		*0.0	*0.0	*0.09		Tons Product	20, 267
3-01-125-22	Caustic Scrubber		*0.0	*0.0	*0.005		Tons Product	20, 267
3-01-125-24	Fugitive Emissions: General#		*0.0	*0.0	*730,000		Process Unit-Year	1, 2, 267
1,1,1-Trichloroethane (Methyl Chloroform) - 2869								
3-01-125-25	General						Tons Produced	
3-01-125-26	HCl Absorber Vent				*0.2		Tons Product	284
3-01-125-27	Drying Column Vent				*2.0		Tons Product	284
3-01-125-28	Distillation Column Vent				*0.16		Tons Product	104
3-01-125-29	Fugitive Emissions: General#				*77,000		Process Unit-Year	1, 2
Trichloroethylene - 2869								
3-01-125-30	General				*1.3		Tons Produced	21
3-01-125-31	Distillation Unit				*0.03		Tons Product	21
3-01-125-32	Neutralizer				*15.2		Tons Product	104
3-01-125-33	Product Recovery Column				*0.8		Tons Product	104
3-01-125-34	Fugitive Emissions: General#				*730,000		Process Unit-Year	1, 2
Chlorobenzene - 2869[m]								
3-01-125-35	General				*0.8		Tons Produced	13
Vinyl Chloride - 2869								
3-01-125-40	General				*6.5		Tons Produced	22
3-01-125-41	Cracking Furnace				*0.0		Tons Product	22
3-01-125-42	HCl Recovery				*0.2		Tons Product	22
3-01-125-43	Light-ends Recovery Vent				*2.0		Tons Product	22

[#] Note that fugitive emissions are reported in units of lbs/process unit-year rather than lbs/ton product as in the NEDS Source Classification Codes and Emission Factor Listing dated October 1985.

[*] Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Vinyl Chloride - 2869 (Continued)								
3-01-125-44	Drying Column/Dichloroethane				*2.0		Tons Product	22
3-01-125-45	Drying Column/Vinyl Chloride Monomer				*2.0		Tons Product	22
3-01-125-46	Product Recovery Still				*1.4		Tons Product	368
3-01-125-47	Cracking Furnace Decoking				*0.0		Tons Product	368
3-01-125-50	Fugitive Emissions: General#				*275,000		Process Unit-Year	1, 2
Vinylidene Chloride - 2869								
3-01-125-51	General				*15.7		Tons Product	25
3-01-125-52	Dehydrochlorination Reactor Purge Vent		*0.0	*0.0	*12.4		Tons Product	25, 318
3-01-125-53	Distillation Column Vents		*0.0	*0.0	*1.4		Tons Product	25, 318
3-01-125-55	Fugitive Emissions: General#				*19,000		Process Unit-Year	346
Chlorinated Organics - Other Not Classified - 2869								
3-01-125-99	Chlorine Organics: Specify in Comments						Tons Produced	
Brominated Organics - 2869								
3-01-126-99	Bromine Organics						Tons Produced	
Fluorocarbons/Chlorofluorocarbons - 2869								
3-01-127-01	General		*0.0	*0.0	*17.1		Tons Produced	268
3-01-127-02	Distillation Column		*0.0	*0.0	*16.6		Tons Product	268
3-01-127-03	HCl Recovery Column		*0.0	*0.0	*0.0		Tons Product	268
3-01-127-20	Chlorofluorocarbon 12/11				*6.2		Tons Produced	49
3-01-127-30	Chlorofluorocarbon 23/22				*38		Tons Produced	49
3-01-127-40	Chlorofluorocarbon 113/114				*13		Tons Produced	49
3-01-127-80	Fugitive Emissions: General#						Process Unit-Year	
Ammonium Sulfate - 2873								
3-01-130-04	Rotary Dryer	46.0			1.48		Tons Produced	
3-01-130-05	Fluid Bed Dryer	218.0			1.48		Tons Produced	
Organic Acids Production - 2869								
Acetic Acid - 2869								
3-01-132-01	Acetic Acid via Methanol		*0.0	*0.06	*4		Tons Produced	105, 82
3-01-132-05	Acetic Acid via Butane		*0.0	*0.08	*14		Tons Produced	14, 82
3-01-132-10	Acetic Acid via Acetaldehyde		*0.0	*0.0	*22		Tons Produced	14, 82

[#] Note that fugitive emissions are reported in units of lbs/process unit-year rather than lbs/ton product as in the NEDS Source Classification Codes and Emission Factor Listing dated October 1983.

[*] Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO$_x$ Lbs/Unit	NO$_x$ Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Acrylic Acid - 2869								
3-01-132-21	General				*240		Tons Product	14
3-01-132-22	Quench Absorber				*239		Tons Product	23
3-01-132-23	Extraction Column				*1.6		Tons Product	23
3-01-132-24	Vacuum System				*10.5		Tons Product	23
3-01-132-27	Fugitive Emissions: General#						Process Unit-Year	
Organic Acids Production - 2869								
3-01-132-99	Other Not Classified (Specify in Comments)						Tons Produced	
Acetic Anhydride - 2869								
3-01-133-01	General		*0.0	*0.0	*5.5		Tons Produced	24
3-01-133-02	Reactor By-Product Gas Vent				*9.0		Tons Product	26
3-01-133-03	Distillation Column Vent				*1.4		Tons Product	26
3-01-133-80	Fugitive Emissions: General#						Process Unit-Year	
Esters Production - 2869								
3-01-137-01	Ethyl Acrylate				*29.1		Tons Produced	336
3-01-137-10	Butyl Acrylate				*5.4		Tons Produced	335
3-01-137-99	Acrylates: Specify in Comments				*0.6		Tons Produced	13
Acetylene Production - 2813								
3-01-140-01	Raw Material Handling				*NEG		Tons Throughput	206
3-01-140-02	Grinding/Milling				*NEG		Tons Throughput	206
3-01-140-03	Mixing				*NEG		Tons Throughput	206
3-01-140-04	Waste Handling				*9.3		Tons Throughput	206
3-01-140-05	General			*13.5			10^6 Cubic Feet Produced	
Bisphenol A - 2869								
3-01-152-01	General				*0.0		Tons Produced	13
Butadiene - 2869								
3-01-153-01	General						Tons Product	26
3-01-153-10	Houdry Process: General				*23		Tons Product	26
3-01-153-11	Flue Gas Vent				*0.1		Tons Product	14
3-01-153-12	Dehydrogenation Reactor				*11.0		Tons Product	26
3-01-153-20	N-Butene Process: General				*23		Tons Product	26
3-01-153-21	Flue Gas Vent				*0.1		Tons Product	26
3-01-153-22	Hydrocarbon Absorber Column				*10.0		Tons Product	101
3-01-153-80	Fugitive Emissions: General#				*313,000		Process Unit-Year	

#Note that fugitive emissions are reported in units of lbs/process unit-year rather than lbs/ton product as in the NEDS Source Classification Codes and Emission Factor Listing dated October 1985.

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Cumene Production - 2865								
3-01-156-01	General				*1.1		Tons Produced	27
3-01-156-02	Benzene Drying Column				*0.4		Tons Product	27
3-01-156-03	Catalyst Mix Tank Scrubber Vent				*0.3		Tons Product	27
3-01-156-04	Wash-Decant System Vent				*0.02		Tons Product	27
3-01-156-05	Benzene Recovery				*0.03		Tons Product	27
3-01-156-06	Cumene Distillation System Vent				*0.06		Tons Product	27
3-01-156-07	DIPB Stripping Vent				*0.002		Tons Product	27
3-01-156-80	Fugitive Emissions: General#				*150,000		Process Unit-Year	1, 2
Cyclohexane - 2865								
3-01-157-01	General				*0.006		Tons Produced	30
3-01-157-02	Blowdown Tank Discharge				*NEG		Tons Product	30
3-01-157-04	Catalyst Replacement				*0.0		Tons Product	
3-01-157-80	Fugitive Emissions: General#				*240,000		Process Unit-Year	1, 2
Cyclohexanone/ol - 2869								
3-01-158-01	General				*78		Tons Produced	29
3-01-158-80	Fugitive Emissions: General#						Process Unit-Year	
Cyclohexanone/ol - Cyclohexane Oxidation Process - 2869								
3-01-158-02	High Pressure Scrubber Vent				*33.5		Tons Product	30
3-01-158-03	Low Pressure Scrubber Vent				*5.2		Tons Product	30
Cyclohexanone/ol - Phenol Hydrogenation Process - 2869								
3-01-158-21	Hydrogenation Reactor Vent				*3.0		Tons Product	30
3-01-158-22	Distillation Vent				*0.12		Tons Product	30
Vinyl Acetate - 2869								
3-01-167-01	General						Tons Produced	
3-01-167-02	Inert-Gas Purge Vent				*8.8		Tons Product	31
3-01-167-03	CO_2 Vent				*0.6		Tons Product	31
3-01-167-04	Inhibitor Mix Tank Discharge				*5.6		Tons Product	31
3-01-167-80	Fugitive Emissions: General#				*360,000		Process Unit-Year	1, 2
3-01-167-99	Specify in Comments						Tons Product	
Ethylbenzene - 2865								
3-01-169-01	General				*0.01		Tons Produced	13
3-01-169-02	Alkylation Reactor Vent				*0.0		Tons Product	13
3-01-169-03	Benzene Drying				*0.0		Tons Product	13
3-01-169-04	Benzene Recovery/Recycle				*0.0		Tons Product	13
3-01-169-05	Ethylbenzene Recovery				*0.0		Tons Product	13

[#] Note that fugitive emissions are reported in units of lbs/process unit-year rather than lbs/ton product as in the NEDS Source Classification Codes and Emission Factor Listing dated October 1985.

[*] Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Ethylbenzene - 2865 (Continued)								
3-01-169-06	Polyethylbenzene Recovery				*0.0		Tons Product	13
3-01-169-80	Fugitive Emissions: General#				*329,000		Process Unit-Year	106
Ethylene Oxide - 2869								
3-01-174-01	General				*7.8		Tons Produced	13
3-01-174-02	Air-Oxidation Process Reactor - Main Vent				*2.8		Tons Product	13
3-01-174-10	Oxygen-Oxidation Process Reactor - CO_2 Purge Vent				*8.0		Tons Product	31
3-01-174-11	Oxygen-Oxidation Process Reactor - Argon Purge Vent				*21.8		Tons Product	31
3-01-174-21	Stripper Purge Vent				*0.004		Tons Product	32
3-01-174-80	Fugitive Emissions: General#				*168,000		Process Unit-Year	31
Glycerin (Glycerol) - 2869								
3-01-176-01	General				*130		Tons Produced	34
3-01-176-10	Chlorination Process: General		*0.0	*0.0			Tons Product	156
3-01-176-11	CO_2 Absorber Vent				*0.8		Tons Product	33
3-01-176-12	Evaporator				*0.0		Tons Product	33
3-01-176-13	Concentrator				*0.0		Tons Product	33
3-01-176-14	Stripping Column				*0.0		Tons Product	33
3-01-176-15	Light-ends Stripping Column				*0.0		Tons Product	33
3-01-176-16	Solvent Stripping Column				*0.2		Tons Product	33
3-01-176-17	Product Distillation Column				*0.0		Tons Product	33
3-01-176-18	Cooling Tower				*5.6		Tons Product	33
3-01-176-30	Oxidation Process: General						Tons Product	
3-01-176-31	Light-ends Stripper				*30.0		Tons Product	33
3-01-176-32	Concentrator				*0.3		Tons Product	33
3-01-176-33	Glycerin Flasher Column				*0.3		Tons Product	33
3-01-176-34	Product Distillation Column				*0.3		Tons Product	33
3-01-176-80	Fugitive Emissions: General#						Process Unit-Year	
Toluene Diisocyanate - 2865								
3-01-181-01	General						Tons Produced	
3-01-181-02	Sulfuric Acid Concentrator				*10.0		Tons Product	35
3-01-181-03	Nitration Reactor				*0.05		Tons Product	35
3-01-181-04	Catalyst Filtration				*0.001		Tons Product	35
3-01-181-05	TDA Vacuum Distillation Unit				*0.007		Tons Product	35
3-01-181-06	Dichlorobenzene Solvent Recovery				*3		Tons Product	35
3-01-181-07	TDI Flash Distillation				*3		Tons Product	35
3-01-181-08	TDI Purification				*3		Tons Product	35

#Note that fugitive emissions are reported in units of lbs/process unit-year rather than lbs/ton product as in the NEDS Source Classification Codes and Emission Factor Listing dated October 1985.

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Toluene Diisocyanate - 2865 (Continued)								
3-01-181-09	Residue Vacuum Distillation Unit				*0.0		Tons Product	35
3-01-181-10	HCl Absorber				*0.0		Tons Product	35
3-01-181-80	Fugitive Emissions: General#						Process Unit-Year	
Methyl Methacrylate - 2869								
3-01-190-01	General						Tons Product	
3-01-190-02	Acetone Cyanohydrin Reactor Off-Gas				*0.08		Tons Product	36
3-01-190-03	Recovery Columns				*2.3		Tons Product	36
3-01-190-04	Acetone Evaporation Vacuum Vent				*0.008		Tons Product	36
3-01-190-10	Hydrolysis Reactor				*13.2		Tons Product	36
3-01-190-11	Distillation Unit				*1.9		Tons Product	36
3-01-190-12	MMA and Light-ends Distillation Unit				*16.5		Tons Product	36
3-01-190-13	Acid Distillation				*1.1		Tons Product	36
3-01-190-14	MMA Purification				*14.1		Tons Product	36
3-01-190-80	Fugitive Emissions: General#				*27,000		Process Unit-Year	1, 2
Nitrobenzene - 2865								
3-01-195-01	General				*2.7		Tons Produced	13
3-01-195-02	Reactor and Separator Vent				*1.9		Tons Product	37
3-01-195-03	Acid Stripper Vent				*0.34		Tons Product	37
3-01-195-04	Washer and Neutralizer Vent				*0.02		Tons Product	37
3-01-195-05	Nitrobenzene Stripper Vent				*0.34		Tons Product	37
3-01-195-06	Waste Acid Storage				*0.005		Tons Product	37
3-01-195-80	Fugitive Emissions: General#				*138,000		Process Unit-Year	1, 2
Olefins Production - 2869								
Ethylene - 2869								
3-01-197-01	General						Tons Produced	
3-01-197-41	Flue Gas Vent				*0.86		Tons Product	38
3-01-197-42	Pyrolysis Furnace Decoking				*0.0		Tons Product	44
3-01-197-43	Acid Gas Removal				*0.02		Tons Product	38
3-01-197-44	Catalyst Regeneration				*NEG		Tons Product	44
3-01-197-45	Compressor Lube Oil Vent				*14.6		Tons Product	44
3-01-197-49	Fugitive Emissions: General#				*695,000		Process Unit-Year	1, 2
Propylene - 2869								
3-01-197-05	General				*1.0		Tons Produced	207
3-01-197-06	Reactor				*0.0		Tons Product	13

[#] Note that fugitive emissions are reported in units of lbs/process unit-year rather than lbs/ton product as in the NEDS Source Classification Codes and Emission Factor Listing dated October 1985.

[*] Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO$_x$ Lbs/Unit	NO$_x$ Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Propylene - 2869 (Continued)								
3-01-197-07	Drying Tower				*0.02		Tons Product	368
3-01-197-08	Light-ends Stripper				*0.01		Tons Product	368
3-01-197-09	Fugitive Emissions: General#						Process Unit-Year	
Butylene - 2869								
3-01-197-10	General						Tons Produced	
3-01-197-99	Other Not Classified (Specify in Comments)						Tons Produced	
Phenol - 2865								
3-01-202-01	General				*20		Tons Produced	39
3-01-202-02	Cumene Oxidation		*0.0	*0.0	*7.6		Tons Product	39, 156
3-01-202-03	CHP Concentrator				*4.2		Tons Product	39
3-01-202-04	Light-ends Distillation Vent			*0.0	*0.6		Tons Product	108
3-01-202-05	Acetone Finishing Column			*0.0	*1.3		Tons Product	108
3-01-202-06	Phenol Distillation Column			*0.0	*7.6		Tons Product	39
3-01-202-10	Oxidate Wash/Separation			*0.0	*0.16		Tons Product	108
3-01-202-11	CHP Cleavage Vent			*0.0	*0.95		Tons Product	108
3-01-202-80	Fugitive Emissions: General#				*731,000		Process Unit-Year	1, 2
Propylene Oxide - 2869								
3-01-205-01	General						Tons Produced	
3-01-205-02	Chlorohydronation Process: General						Tons Product	
3-01-205-03	Vent Gas Scrubber Vent				*20.5		Tons Product	40
3-01-205-04	Saponification Column Vent				*0.09		Tons Product	40
3-01-205-05	PO Stripping Column Vent				*0.01		Tons Product	40
3-01-205-06	Light-ends Stripping Column Vent				*0.01		Tons Product	40
3-01-205-07	PO Final Distillation Column Vent				*0.01		Tons Product	40
3-01-205-08	DCP Distillation Column Vent				*0.0002		Tons Product	40
3-01-205-09	DCIPE Distillation Column Vent				*0.0		Tons Product	40
3-01-205-20	Isobutane Hydroperoxide Process: General						Tons Product	40
3-01-205-21	Oxidation Reactor Scrubber Vent				*3.5		Tons Product	40
3-01-205-22	TBA Stripping Column Vent				*0.008		Tons Product	40
3-01-205-23	Catalyst Mix Tank Vent				*0.0		Tons Product	40
3-01-205-24	PO Stripping Column Vent				*0.04		Tons Product	40
3-01-205-25	Crude TBA Recovery Column Vent				*0.03		Tons Product	40
3-01-205-26	TBA Wash-Decant System Vent				*0.01		Tons Product	40
3-01-205-27	Wastewater Stripping Column Vent				*1.9		Tons Product	40
3-01-205-28	Solvent Scrubber Vent				*1.3		Tons Product	40

#Note that fugitive emissions are reported in units of lbs/process unit-year rather than lbs/ton product as in the NEDS Source Classification Codes and Emission Factor Listing dated October 1985.

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Propylene Oxide - 2869 (Continued)								
3-01-205-29	Solvent Recovery Column Vent				*0.0009		Tons Product	40
3-01-205-30	Water Stripping Column Vent				*0.003		Tons Product	40
3-01-205-31	Propylene Glycol and Dipropylene Glycol Combined Column Vent				*0.1		Tons Product	40
3-01-205-32	Flue Gas Vent				*0.08		Tons Product	40
3-01-205-40	Ethylbenzene Hydroperoxide Process: General						Tons Product	40
3-01-205-41	Oxidation Reactor Scrubber Vent				*1.0		Tons Product	40
3-01-205-42	Falling Film Evaporator Vent				*0.01		Tons Product	40
3-01-205-43	Catalyst Mix Tank Vent				*0.0		Tons Product	40
3-01-205-44	Separation Column Vent				*0.3		Tons Product	40
3-01-205-45	Light-ends Stripping Column Vent				*0.3		Tons Product	40
3-01-205-46	Propylene Recovery Column Vent				*0.3		Tons Product	40
3-01-205-47	Product Wash-Decant System Vent				*0.01		Tons Product	40
3-01-205-48	Mixed Hydrocarbon Wash-Decant System Vent				*0.003		Tons Product	40
3-01-205-49	Ethylbenzene Wash-Decant System Vent				*0.003		Tons Product	40
3-01-205-50	Ethylbenzene Stripping Column Vent				*0.003		Tons Product	40
3-01-205-51	Light Hydrocarbon Stripping Column Vent				*0.003		Tons Product	40
3-01-205-52	MBA-AP Stripping Column Vent				*0.02		Tons Product	40
3-01-205-53	Dehydration Reactor System Vent				*0.02		Tons Product	40
3-01-205-54	Light Impurities Stripping Column Vent				*2.5		Tons Product	40
3-01-205-55	Styrene Finishing Column Vent				*1.7		Tons Product	40
3-01-205-80	Fugitive Emissions: General#						Process Unit-Year	
Styrene - 2865								
3-01-206-01	General		*0.0	*0.04	*33		Tons Produced	41, 155
3-01-206-02	Benzene Recycle				*0.6		Tons Product	42
3-01-206-03	Styrene Purification				*12		Tons Product	13
3-01-206-80	Fugitive Emissions: General#				*248,000		Process Unit-Year	1, 2
Caprolactam - 2869								
3-01-210-01	General						Tons Product	
3-01-210-02	Cyclohexanone Purification Vent				*6.2		Tons Product	42
3-01-210-03	Dehydrogenation Reactor Vent				*0.02		Tons Product	292
3-01-210-04	Oleum Reactor				*NEG		Tons Product	42
3-01-210-05	Neutralization Reactor Vent				*0.08		Tons Product	42
3-01-210-06	Solvent Separation/Recovery				*4.0		Tons Product	42

#Note that fugitive emissions are reported in units of lbs/process unit-year rather than lbs/ton product as in the NEDS Source Classification Codes and Emission Factor Listing dated October 1985.

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Caprolactam - 2869 (Continued)								
3-01-210-07	Oximation Reactor and Separator				*0.05		Tons Product	42
3-01-210-08	Caprolactam Purification				*0.3		Tons Product	42
3-01-210-09	Ammonium Sulfate Drying				*1.2		Tons Product	42
3-01-210-10	Ammonium Sulfate Cooling/ Screening/Storage				*0.1		Tons Product	42
3-01-210-80	Fugitive Emissions: General#						Process Unit-Year	
Linear Alkylbenzene - 2869								
3-01-211-01	Olefin Process: General						Tons Product	
3-01-211-02	Benzene Drying				*0.008		Tons Product	13
3-01-211-03	Hydrogen Fluoride Scrubber Vent				*22		Tons Product	43
3-01-211-04	Vacuum Refining				*0.2		Tons Product	43
3-01-211-21	Chlorination Process: General						Tons Product	
3-01-211-22	Parrafin Drying Column Vent				*5.6		Tons Product	43
3-01-211-23	HCl Absorber Vent				*0.1		Tons Product	43
3-01-211-24	Atmospheric Wash-Decant Vent				*25		Tons Product	43
3-01-211-25	Benzene Stripping Column Vent				*7.4		Tons Product	43
3-01-211-80	Fugitive Emissions: General#						Process Unit-Year	
Alcohols Production - 2869								
Methanol - 2869								
3-01-250-01	General						Tons Produced	
3-01-250-02	Purge Gas Vent				*2.2		Tons Product	44
3-01-250-03	Distillation Vent				*0.8		Tons Product	44
3-01-250-04	Fugitive Emissions: General#				*575,000		Process Unit-Year	44
Alcohols Production - 2869								
3-01-250-05	Ethanol from Ethylene				*0.9		Tons Produced	372
3-01-250-10	Ethanol by Fermentation				*1.9		Tons Produced	143
3-01-250-15	Isopropanol				*NEG		Tons Produced	372
3-01-250-21	Alcohols by Oxo Process				*4.0		Tons Produced	372
3-01-250-25	Fatty Alcohols by Hydrogenation				*3.0		Tons Produced	372
3-01-250-99	Other Not Classified (Specify in Comments)						Tons Produced	
Ethylene Glycol - 2869								
3-01-251-01	General						Tons Produced	
3-01-251-02	Evaporator Purge Vent				*0.95		Tons Product	13
3-01-251-03	Water Removal Steam-Jet Ejector				*1.2		Tons Product	13
3-01-251-04	Distillation Column Vent				*0.0		Tons Product	13
3-01-251-80	Fugitive Emissions: General#				*24,000		Process Unit-Year	1, 2

[#] Note that fugitive emissions are reported in units of lbs/process unit-year rather than lbs/ton product as in the NEDS Source Classification Codes and Emission Factor Listing dated October 1985.

[*] Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Ethers Production - 2869								
3-01-252-01	General		*0.0	*0.0	*0.16		Tons Produced	168
Glycol Ethers - 2869								
3-01-253-01	General						Tons Produced	
3-01-253-02	Vacuum System Vent				*0.03		Tons Product	45
3-01-253-05	Catalyst-Methanol Mix Tank				*0.02		Tons Product	45
3-01-253-06	Methanol Recovery Column Vent				*0.03		Tons Product	45
3-01-253-15	Catalyst-Ethanol Mix Tank				*0.01		Tons Product	45
3-01-253-16	Ethanol Recovery Column Vent				*0.19		Tons Product	45
3-01-253-25	Catalyst-Butanol Mix Tank				*0.002		Tons Product	45
3-01-253-26	Butanol Recovery Column Vent				*0.03		Tons Product	45
3-01-253-80	Fugitive Emissions: General#				*20,100		Process Unit-Year	45
Nitriles Production - 2869								
3-01-254-01	Acetonitrile				*200		Tons Produced	136
Acrylonitrile - 2869								
3-01-254-05	General				*220		Tons Produced	14
3-01-254-06	Absorber Vent: Normal				*200		Tons Product	46
3-01-254-07	Absorber Vent: Startup				*0.5		Tons Product	46
3-01-254-08	Recovery/Purification Column Vent				*20.0		Tons Product	46
3-01-254-09	Fugitive Emissions: General#				*22,000		Process Unit-Year	1, 2
Adiponitrile - 2869								
3-01-254-10	via Adipic Acid: General				*1.6		Tons Produced	13
3-01-254-11	Ammonia Recovery Still				*NEG		Tons Product	285
3-01-254-12	Product Fractionator				*20		Tons Product	52
3-01-254-13	Product Recovery Vent				*20		Tons Product	52
3-01-254-15	via Butadiene: General				*51		Tons Product	47
3-01-254-16	Chlorination Reactor				*36		Tons Product	47
3-01-254-17	Cyanide Synthesis				*0.0		Tons Product	47
3-01-254-18	Cyanation/Isomerization				*15.5		Tons Product	47
3-01-254-20	Fugitive Emissions: General#						Process Unit-Year	
Nitriles Production - 2869								
3-01-254-99	Other Not Classified (Specify in Comments)						Tons Produced	

#Note that fugitive emissions are reported in units of lbs/process unit-year rather than lbs/ton product as in the NEDS Source Classification Codes and Emission Factor Listing dated October 1985.

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO$_x$ Lbs/Unit	NO$_x$ Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Aromatics Production - 2869								
Benzene Production - 2869								
3-01-258-01	- General						Tons Produced	
3-01-258-02	- Reactor				*0.3		Tons Product	13
3-01-258-03	- Distillation Vent				*0.8		Tons Product	368
Toluene Production - 2869								
3-01-258-05	- General						Tons Produced	
3-01-258-06	- Reactor				*0.3		Tons Product	368
3-01-258-07	- Distillation Vent				*0.8		Tons Product	368
Aromatics Production - 2869								
3-01-258-10	- p-Xylene						Tons Produced	
Mixed Xylenes - 2869								
3-01-258-15	- General						Tons Produced	
3-01-258-16	- Reactor				*0.3		Tons Produced	368
3-01-258-17	- Distillation Unit				*0.8		Tons Produced	368
Aromatics Production - 2869								
3-01-258-80	- Fugitive Emissions: General#				*379,000		Process Unit-Year	238
3-01-258-99	- Other Not Classified (Specify in Comments)						Tons Produced	
Chlorobenzene - 2865								
3-01-301-35	- General							
3-01-301-01	- Tail Gas Scrubber				*1.2		Tons Product	48
3-01-301-02	- Benzene Drying: Distillation				*0.8		Tons Product	48
3-01-301-03	- Benzene Recovery		*0.0	*0.0	*0.002		Tons Product	13
3-01-301-04	- Heavy-ends Processing		*0.0	*0.0	*0.2		Tons Product	48
3-01-301-05	- MCB Distillation		*0.0	*0.0	*0.8		Tons Product	48
3-01-301-06	- Vacuum System Vent		*0.0	*0.0	*0.9		Tons Product	48
3-01-301-07	- DCBs Crystallization		*0.0	*0.0	*0.03		Tons Product	48
3-01-301-08	- DCBs Crystal Handling/Loading		*0.0	*0.0	*0.04		Tons Product	48
3-01-301-10	- Catalyst Incineration				*NEG		Tons Product	285
3-01-301-80	- Fugitive Emissions: General#				*418,000		Process Unit-Year	48
Carbon Tetrachloride - 2869								
3-01-302-01	- General						Tons Product	
3-01-302-02	- Distillation Vent				*0.01		Tons Product	49
3-01-302-03	- Caustic Scrubber				*0.3		Tons Product	49
3-01-302-80	- Fugitive Emissions: General#				*166,000		Process Unit-Year	100

[#] Note that fugitive emissions are reported in units of lbs/process unit-year rather than lbs/ton product as in the NEDS Source Classification Codes and Emission Factor Listing dated October 1985.

[*] Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Allyl Chloride - 2869								
3-01-303-01	Chlorination Process: General						Tons Product	
3-01-303-02	HCL Absorber				*0.3		Tons Product	51
3-01-303-03	Light-ends Distillation Column				*130.0		Tons Product	51
3-01-303-04	Allyl Chloride Distillation Column				*130.0		Tons Product	51
3-01-303-05	Dichloropropene Distillation Column				*2.0		Tons Product	51
3-01-303-80	Fugitive Emissions: General#						Process Unit-Year	
Allyl Alcohol - 2869								
3-01-304-01	General						Tons Product	
3-01-304-02	Catalyst Preparation				*450		Tons Product	51
3-01-304-03	Filtration System				*6.4		Tons Product	51
3-01-304-04	Light-ends Stripper				*22		Tons Product	51
3-01-304-05	Distillation System Condenser				*23		Tons Product	51
3-01-304-80	Fugitive Emissions: General#						Process Unit-Year	
Epichlorohydrin - 2869								
3-01-305-01	General						Tons Product	
3-01-305-02	Epoxidation Reactor				*208		Tons Product	13
3-01-305-03	Azeotrope Column				*208		Tons Product	13
3-01-305-04	Light-ends Stripper				*0.003		Tons Product	13
3-01-305-05	Finishing Column				*0.7		Tons Product	13
3-01-305-80	Fugitive Emissions: General#						Process Unit-Year	
General Processes - 2865, 2869								
3-01-800-01	Fugitive Leaks#						Process Unit-Year	
3-01-810-01	Air Oxidation Units						Tons Product	
3-01-820-01	Wastewater Separators						Tons Product	
3-01-830-01	Storage/Transfer				*0.85		Tons Product	53
3-01-840-01	Distillation Units						Tons Product	
Inorganic Chemical Storage								
Fixed Roof Tanks								
3-01-870-01	Hydrochloric Acid: Breathing Loss		*0.0	*0.0	*0.0		10^3 Gallons Storage Capacity	70, 263
3-01-870-02	Hydrochloric Acid: Working Loss		*0.0	*0.0	*0.0		10^3 Gallons Throughput	70, 263
3-01-870-03	Hydrofluoric Acid: Breathing Loss		*0.0	*0.0	*0.0		10^3 Gallons Storage Capacity	70, 263
3-01-870-04	Hydrofluoric Acid: Working Loss		*0.0	*0.0	*0.0		10^3 Gallons Throughput	70, 263
3-01-870-05	Nitric Acid: Breathing Loss		*0.0		*0.0		10^3 Gallons Storage Capacity	70

[#] Note that fugitive emissions are reported in units of lbs/process unit-year rather than lbs/ton product as in the NEDS Source Classification Codes and Emission Factor Listing dated October 1985.

[*] Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Fixed Roof Tanks (Continued)								
3-01-870-06	Nitric Acid: Working Loss		*0.0		*0.0		10^3 Gallons Throughput	70
3-01-870-07	Phosphoric Acid: Breathing Loss		*0.0	*0.0	*0.0		10^3 Gallons Storage Capacity	70, 263
3-01-870-08	Phosphoric Acid: Working Loss		*0.0	*0.0	*0.0		10^3 Gallons Throughput	70, 263
3-01-870-09	Sulfuric Acid: Breathing Loss			*0.0	*0.0		10^3 Gallons Storage Capacity	70, 263
3-01-870-10	Sulfuric Acid: Working Loss			*0.0	*0.0		10^3 Gallons Throughput	70, 263
3-01-870-97	Specify Liquid: Breathing Loss						10^3 Gallons Storage Capacity	
3-01-870-98	Specify Liquid: Working Loss						10^3 Gallons Throughput	
Floating Roof Tanks								
3-01-875-01	Carbon Disulfide: Breathing Loss			*0.0	*0.0		10^3 Gallons Storage Capacity	70, 263
3-01-875-02	Carbon Disulfide: Working Loss			*0.0	*0.0		10^3 Gallons Throughput	70, 263
3-01-875-97	Specify Liquid: Breathing Loss						10^3 Gallons Storage Capacity	
3-01-875-98	Specify Liquid: Working Loss						10^3 Gallons Throughput	
Pressure Tanks								
3-01-885-01	Ammonia: Withdrawal Loss				*0.0		10^3 Gallons Throughput	70
3-01-885-02	Carbon Monoxide: Withdrawal Loss		*0.0	*0.0	*0.0		10^3 Gallons Throughput	70, 263
3-01-885-03	Chlorine: Withdrawal Loss		*0.0	*0.0	*0.0		10^3 Gallons Throughput	70, 263
3-01-885-04	Hydrogen Cyanide: Withdrawal Loss		*0.0	*0.0	*0.0		10^3 Gallons Throughput	70, 263
3-01-885-05	Sulfur Dioxide: Withdrawal Loss			*0.0	*0.0		10^3 Gallons Throughput	70, 263
3-01-885-99	Specify Gas: Withdrawal Loss						10^3 Gallons Throughput	
Chemical Manufacturing - Fugitive Emissions[f]								
3-01-888-01	Specify in Comments Field						Process Unit-Year	
3-01-888-02	Specify in Comments Field						Process Unit-Year	
3-01-888-03	Specify in Comments Field						Process Unit-Year	
3-01-888-04	Specify in Comments Field						Process Unit-Year	
3-01-888-05	Specify in Comments Field						Process Unit-Year	
Chemical Manufacturing - Fuel Fired Equipment								
Process Heaters								
3-01-900-01	Distillate Oil (No. 2)		*144.0 S	*20.0	*0.20		10^3 Gallons Burned	129
3-01-900-02	Residual Oil		*159.0 S	*50.0	*0.28		10^3 Gallons Burned	129
3-01-900-03	Natural Gas		*0.6	*140.0	*2.8		10^6 Cubic Feet Burned	129
3-01-900-04	Process Gas		*950.0 S	*140.0	*2.8		10^6 Cubic Feet Burned	129
Incinerators								
3-01-900-11	Distillate Oil (No. 2)				*0.4		10^3 Gallons Burned	130
3-01-900-12	Residual Oil				*0.56		10^3 Gallons Burned	130

---

[a] Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Incinerators (Continued)								
3-01-900-13	Natural Gas				*5.6		10^6 Cubic Feet Burned	130
3-01-900-14	Process Gas				*5.6		10^6 Cubic Feet Burned	130
Waste Gas Flares								
3-01-900-99	General				*5.6		10^6 Cubic Feet Burned	314
Chemical Manufacturing - Other Not Classified								
3-01-999-98	Specify in Comments						10^3 Gallons Produced	
3-01-999-99	Specify in Comments						Tons Produced	
FOOD AND AGRICULTURE - MAJOR GROUPS 01, 02, 07, 20, 21, 42, 44 AND 51[n]								
Alfalfa Dehydrating - 2048								
3-02-001-02	Primary Cyclone and Dryer	10.0	0.0	0.0	0.0	0.0	Tons Product	
3-02-001-03	Meal Collector Cyclone	2.6	0.0	0.0	0.0	0.0	Tons Product	
3-02-001-04	Pellet Cooler Cyclone	3.0	0.0	0.0	0.0	0.0	Tons Product	
Coffee Roasting - 2095								
3-02-002-01	Direct Fired Roaster	7.6	*0.4	0.1	*2.6		Tons Green Beans	240
3-02-002-02	Indirect Fired Roaster	4.2	*0.4	0.1	*2.6		Tons Green Beans	240
3-02-002-03	Stoner/Cooler	1.4	*NEG	0.0	*NEG		Tons Green Beans	319
3-02-002-99	Other Not Classified (Specify in Comments)						Tons Product	
Instant Coffee Products - 2095								
3-02-003-01	Spray Dryer	1.4			*NEG		Tons Green Beans	285
Cotton Ginning - 0724								
3-02-004-01	Unloading Fan	5.0	0.0	0.0	0.0	0.0	Bales of Cotton	
3-02-004-02	Seed Cotton Cleaning System	0.3	0.0	0.0	0.0	0.0	Bales of Cotton	
3-02-004-03	Stick/Burr Machine	0.2	0.0	0.0	0.0	0.0	Bales of Cotton	
3-02-004-04	Miscellaneous (Lint Cleaner/ Battery Condensers/Master Trash/ Overflow/Mote Fans)	1.5	0.0	0.0	0.0	0.0	Bales of Cotton	
3-02-004-10	General (Entire Process, Alternative to Above)	7.0	0.0	0.0	0.0	0.0	Bales of Cotton	
Feed and Grain Terminal Elevators - 5153, 4221, 4463								
3-02-005-03	Cleaning	3.0	0.0	0.0	0.0	0.0	Tons Grain Processed	
3-02-005-04	Drying	1.1	0.0	0.0	0.0	0.0	Tons Grain Processed	
3-02-005-05	Unloading (Receiving)	1.0	0.0	0.0	0.0	0.0	Tons Grain Processed	
3-02-005-06	Loading (Shipping)	0.3	0.0	0.0	0.0	0.0	Tons Grain Processed	
3-02-005-07	Removal from Bins (Tunnel Belt)	1.4	0.0	0.0	0.0	0.0	Tons Grain Processed	
3-02-005-08	Elevator Legs (Headhouse)	1.5	0.0	0.0	0.0	0.0	Tons Grain Processed	

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Feed and Grain Terminal Elevators - 5153, 4221, 4463 (Continued)								
3-02-005-09	Tripper (Gallery Belt)	1.0	0.0	0.0	0.0	0.0	Tons Grain Processed	
3-02-005-10	Removal from Bins (Tunnel Belt)	2.8	0.0	0.0	0.0	0.0	Tons Grain Shipped or Received	
3-02-005-11	Elevator Legs (Headhouse)	4.5	0.0	0.0	0.0	0.0	Tons Grain Shipped or Received	
3-02-005-12	Country Elevators: General		0.0	0.0	0.0	0.0	Tons Grain Shipped or Received	
Feed and Grain Country Elevators - 5153, 4221								
3-02-006-03	Cleaning	3.0	0.0	0.0	0.0	0.0	Tons Grain Processed	
3-02-006-04	Drying	0.7	0.0	0.0	0.0	0.0	Tons Grain Processed	
3-02-006-05	Unloading	0.6	0.0	0.0	0.0	0.0	Tons Grain Processed	
3-02-006-06	Loading	0.3	0.0	0.0	0.0	0.0	Tons Grain Processed	
3-02-006-07	Removal from Bins	1.0	0.0	0.0	0.0	0.0	Tons Grain Processed	
3-02-006-08	Elevator Legs	1.5	0.0	0.0	0.0	0.0	Tons Grain Processed	
3-02-006-09	Removal from Bins	2.1	0.0	0.0	0.0	0.0	Tons Grain Shipped or Received	
3-02-006-10	Elevator Legs	4.7	0.0	0.0	0.0	0.0	Tons Grain Shipped or Received	
3-02-006-11	Country Elevators: General		0.0	0.0	0.0	0.0	Tons Grain Shipped or Received	
Barley Milling - 2041								
3-02-007-03	Barley Cleaning	0.2	0.0	0.0	0.0	0.0	Tons Grain Processed	
3-02-007-05	Barley Flour Mill	3.0	0.0	0.0	0.0	0.0	Tons Grain Processed	
Milo Milling - 2041								
3-02-007-04	Milo Cleaning	0.4	0.0	0.0	0.0	0.0	Tons Grain Processed	
Drum Mills - 2041								
3-02-007-11	Grain Receiving	1.0	0.0	0.0	0.0	0.0	Tons Grain Processed	
3-02-007-12	Precleaning/Handling	5.0	0.0	0.0	0.0	0.0	Tons Grain Processed	
3-02-007-13	Cleaning House		0.0	0.0	0.0	0.0	Tons Grain Processed	
3-02-007-14	Millhouse		0.0	0.0	0.0	0.0	Tons Grain Processed	
Rye Milling - 2041								
3-02-007-21	Grain Receiving	1.0	0.0	0.0	0.0	0.0	Tons Grain Processed	
3-02-007-22	Precleaning/Handling	5.0	0.0	0.0	0.0	0.0	Tons Grain Processed	
3-02-007-23	Cleaning House		0.0	0.0	0.0	0.0	Tons Grain Processed	
3-02-007-24	Millhouse	70.0 P	0.0	0.0	0.0	0.0	Tons Grain Processed	
Wheat Mills - 2041								
3-02-007-31	Grain Receiving	1.0	0.0	0.0	0.0	0.0	Tons Grain Processed	
3-02-007-32	Precleaning/Handling	5.0	0.0	0.0	0.0	0.0	Tons Grain Processed	

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Wheat Mills - 2041 (Continued)								
3-02-007-33	Cleaning House		0.0	0.0	0.0	0.0	Tons Grain Processed	
3-02-007-34	Millhouse	70.0 P	0.0	0.0	0.0	0.0	Tons Grain Processed	
Dry Corn Milling - 2041								
3-02-007-41	Grain Receiving	1.0	0.0	0.0	0.0	0.0	Tons Grain Received	
3-02-007-42	Grain Drying	0.5	0.0	0.0	0.0	0.0	Tons Grain Received	
3-02-007-43	Precleaning/Handling	5.0	0.0	0.0	0.0	0.0	Tons Grain Received	
3-02-007-44	Cleaning House	6.0	0.0	0.0	0.0	0.0	Tons Grain Received	
3-02-007-45	Degerming and Milling		0.0	0.0	0.0	0.0	Tons Grain Received	
Corn Wet Milling - 2046								
3-02-007-51	Grain Receiving	1.0	0.0	0.0	0.0	0.0	Tons Grain Received	
3-02-007-52	Grain Handling	5.0	0.0	0.0	0.0	0.0	Tons Grain Received	
3-02-007-53	Grain Cleaning	6.0	0.0	0.0	0.0	0.0	Tons Grain Received	
3-02-007-54	Dryers		0.0	0.0	0.0	0.0	Tons Grain Received	
3-02-007-55	Bulk Loading		0.0	0.0	0.0	0.0	Tons Grain Received	
3-02-007-56	Milling		0.0	0.0	0.0	0.0	Tons Grain Received	
Oat Milling - 2041								
3-02-007-60	General		0.0	0.0	0.0	0.0	Tons Grain Received	
Rice Milling - 2044								
3-02-007-71	Grain Receiving	0.64	0.0	0.0	0.0	0.0	Tons Grain Received	
3-02-007-72	Precleaning/Handling	5.0	0.0	0.0	0.0	0.0	Tons Grain Received	
3-02-007-73	Drying	0.3	0.0	0.0	0.0	0.0	Tons Grain Received	298
3-02-007-74	Cleaning and Millhouse		0.0	0.0	0.0	0.0	Tons Grain Received	
Soybean Mills - 2075, 2041								
3-02-007-81	Grain Receiving	1.6	0.0	0.0	0.0	0.0	Tons Grain Received	
3-02-007-82	Grain Handling	5.0	0.0	0.0	0.0	0.0	Tons Grain Received	
3-02-007-83	Grain Cleaning		0.0	0.0	0.0	0.0	Tons Grain Received	
3-02-007-84	Drying	7.2	0.0	0.0	0.0	0.0	Tons Grain Received	
3-02-007-85	Cracking and Dehulling	3.3	0.0	0.0	0.0	0.0	Tons Grain Received	
3-02-007-86	Hull Grinding	2.0	0.0	0.0	0.0	0.0	Tons Grain Received	
3-02-007-87	Bean Conditioning	0.1	0.0	0.0	0.0	0.0	Tons Grain Received	
3-02-007-88	Flaking	0.57	0.0	0.0	0.0	0.0	Tons Grain Received	
3-02-007-89	Meal Dryer	1.5	0.0	0.0	0.0	0.0	Tons Grain Received	
3-02-007-90	Meal Cooler	1.8	0.0	0.0	0.0	0.0	Tons Grain Received	
3-02-007-91	Bulk Loading	0.27	0.0	0.0	0.0	0.0	Tons Grain Received	
Feed Manufacture - 2082								
3-02-008-02	Grain Receiving	1.3	0.0	0.0	0.0	0.0	Tons Grain Received	
3-02-008-03	Shipping	0.5	0.0	0.0	0.0	0.0	Tons Grain Received	
3-02-008-04	Handling	3.0	0.0	0.0	0.0	0.0	Tons Grain Received	

SCC	Process	PART Lbs/Unit	SO$_x$ Lbs/Unit	NO$_x$ Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Feed Manufacture - 2082 (Continued)								
3-02-008-05	- Grinding		0.0	0.0	0.0	0.0	Tons Grain Received	
3-02-008-06	- Pellet Coolers		0.0	0.0	0.0	0.0	Tons Grain Received	
Beer Production - 2082								
3-02-009-01	- Grain Handling	3.0	0.0	0.0	0.0	0.0	Tons Grain Processed	
3-02-009-02	- Drying Spent Grains	5.0			2.6		Tons Grain Processed	
3-02-009-03	- Brewing				0.0		10^3 Gallons	
3-02-009-04	- Aging	0.0	0.0	0.0	0.0	0.0	Barrel-Year of Stored Product	
3-02-009-05	- Malt Dryer	0.045			0.0		Tons Grain Dried	
Whiskey Fermentation - 2085								
3-02-010-01	- Grain Handling	3.0	0.0	0.0	0.0	0.0	Tons Grain Processed	
3-02-010-02	- Drying Spent Grains	5.0			*2.6		Tons Grain Processed	202
3-02-010-03	- Aging	0.0			10.0		Barrels (50 Gallon)	
3-02-010-04	- Fermentation Tank				*3		10^3 Gallons Produced	202
Wines, Brandy, and Brandy Spirits - 2084								
3-02-011-03	- Aging	0.0	0.0	0.0	*0.0	0.0	Barrel-Year of Stored Product	202
3-02-011-04	- Fermentation: Tank				*3		10^3 Gallons Produced	202
3-02-011-05	- Fermentation at 52 F				1.06		10^3 Gallons Produced	
3-02-011-06	- Fermentation at 80 F				4.79		10^3 Gallons Produced	
3-02-011-99	- Other Not Classified (Specify in Comments)	0.0					Gallons Produced	
Fish Processing - 2077, 2091								
3-02-012-01	- Cooker-Fresh Fish Scrap	0.0			0.3		Tons Fish Processed	
3-02-012-02	- Cookers-Stale Fish Scrap	0.0			3.5		Tons Fish Processed	
3-02-012-04	- Canning Cookers	0.0			*1.5		Tons Fish Processed	163
3-02-012-05	- Steam Tube Dryer	5.0			*3.5		Tons Fish Scrap	126
3-02-012-06	- Direct Fire Dryer	8.0			*6.5		Tons Fish Scrap	126
Meat Smokehouses - 2012, 2013								
3-02-013-01	- Combined Operations	0.3	*1.0	*0.7	0.07	0.6	Tons Meat Smoked	122, 141
Starch Manufacturing - 2036								
3-02-014-01	- Combined Operations	8.0		*120	*250		Tons Starch Produced	141, 143
Sugar Cane Processing - 2061, 2062								
3-02-015-99	- Other Not Classified (Specify in Comments)						Tons Sugar Produced	

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Sugar Beet Processing - 2063								
3-02-016-01	Dryer		*0.41	*0.06	*0.2		Tons Raw Beets	264, 329
3-02-016-99	Other Not Classified (Specify in Comments)						Tons Raw Beets	
Peanut Processing - 2076, 2079, 2099								
3-02-017-99	Other Not Classified (Specify in Comments)			*0.06			Tons Processed	149
Candy Manufacturing - 2065, 2066								
3-02-018-99	Other Not Classified (Specify in Comments)						Tons Product	
Vegetable Oil Processing - Specific Products/General - 2046, 2074, 2076, 2079								
3-02-019-04	Coconut Oil: General (2076)						Tons Refined Oil Produced	
3-02-019-06	Corn Oil: General (2046)				*19.0		Ton Extractor Feed Cake	55
3-02-019-07	Cottonseed Oil: General (2074)				*18.0		Ton Extractor Feed Cake	55
3-02-019-08	Soybean Oil: General (2075)				*16.0		Ton Extractor Feed Cake	55
3-02-019-09	Peanut Oil: General (2076)				*21.0		Ton Extractor Feed Cake	55
Vegetable Oil Processing - General Processes for All Products - 2046, 2074, 2076, 2079								
3-02-019-16	Oil Extraction		*NEG	*NEG	*17.0		Ton Extractor Feed Cake	56, 316
3-02-019-17	Meal Preparation				*1.6		Ton Extractor Feed Cake	56
3-02-019-18	Oil Refining				*0.7		Ton Extractor Feed Cake	56
3-02-019-19	Fugitive Leaks				*1.7		Ton Extractor Feed Cake	56
3-02-019-20	Solvent Storage				*0.15		Ton Raw Seed Processed	56
Beef Cattle Feed Lots - 0211								
3-02-020-01	Feed Lots - General	102.2					Head of Cattle Capacity	
3-02-020-02	Feed Lots - General	34.0					Head of Cattle Throughput	
Poultry and Egg Production								
3-02-021-01	Manure Handling: Dry				*NEG		Number of Chickens Capacity	61
3-02-021-02	Manure Handling: Dry				*NEG		Number of Chickens Throughput	61
3-02-021-05	Manure Handling: Wet				*NEG		Number of Chickens Capacity	61
3-02-021-06	Manure Handling: Wet				*NEG		Number of Chickens Throughput	61
Cotton Seed Delinting - 0723								
3-02-022-01	Acid Delinting of Cotton Seeds						Tons Cotton Seed Delinted	
Seed Production and Processing - 0180, 5191								
3-02-026-01	Seed Handling - General		*NEG	*NEG	*NEG		Tons Processed	308

[a] Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Mushroom Growing								
3-02-028-01	General						Tons Produced	
Dairy Products - 2021, 2022, 2023, 2024, 2026								
3-02-030-01	Milk Spray-Dryer		0.0				Tons Product	
3-02-030-99	Other Not Classified (Specify in Comments)						Tons Product	
Export Grain Elevators - 4463, 4221[e]								
3-02-031-03	Cleaning	3.0	0.0	0.0	0.0	0.0	Tons Grain Processed	
3-02-031-04	Drying	1.1	0.0	0.0	0.0	0.0	Tons Grain Processed	
3-02-031-05	Unloading	1.0	0.0	0.0	0.0	0.0	Tons Grain Processed	
3-02-031-06	Loading	1.0	0.0	0.0	0.0	0.0	Tons Grain Processed	
3-02-031-07	Removal from Bins (Tunnel Belt)	1.4	0.0	0.0	0.0	0.0	Tons Grain Processed	
3-02-031-08	Elevator Legs	1.5	0.0	0.0	0.0	0.0	Tons Grain Processed	
3-02-031-09	Tripper (Gallery Belt)	1.0	0.0	0.0	0.0	0.0	Tons Grain Processed	
3-02-031-10	Removal from Bins (Tunnel Belt)	1.7	0.0	0.0	0.0	0.0	Tons Grain Shipped or Received	
3-02-031-11	Elevator Legs	3.3	0.0	0.0	0.0	0.0	Tons Grain Shipped or Received	
Bakeries - 2051, 2052								
3-02-032-01	Bread Baking: Sponge-Dough Process	0.0	0.0	0.0	13.0	0.0	Tons of Bread Baked	
3-02-032-02	Bread Baking: Straight-Dough Process	0.0	0.0	0.0	1.0	0.0	Tons of Bread Baked	
3-02-032-99	Other Not Classified (Specify in Comments)						Tons Product	
Tobacco Processing - 2111, 2121, 2131, 2141								
3-02-033-99	Other Not Classified (Specify in Comments)		*0.48		*0.34		Tons Product	120
Deep Fat Frying - 2099, 2017, 2051, 2092								
3-02-036-01	Cooking Vats: General		*NEG	*NEG	*18.5		Tons Processed	142, 316
Animal/Poultry Rendering								
3-02-038-01	General						Tons Processed	
Food and Agriculture - Fugitive Emissions[f]								
3-02-888-01	Specify in Comments Field#						Process Unit-Year	
3-02-888-02	Specify in Comments Field#						Process Unit-Year	

[#] Note that fugitive emissions are reported in units of lbs/process unit-year rather than lbs/ton product as in the NEDS Source Classification Codes and Emission Factor Listing dated October 1985.

[*] Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Food and Agriculture - Fugitive Emissions (Continued)[f]								
3-02-888-03	Specify in Comments Field#						Process Unit-Year	
3-02-888-04	Specify in Comments Field#						Process Unit-Year	
3-02-888-05	Specify in Comments Field#						Process Unit-Year	
Food and Agriculture - Fuel Fired Equipment								
Process Heaters								
3-02-900-01	Distillate Oil (No. 2)		*144.0 S	*20.0	*0.20		10^3 Gallons Burned	129
3-02-900-02	Residual Oil		*159.0 S	*55.0	*0.28		10^3 Gallons Burned	129
3-02-900-03	Natural Gas		*0.6	*140.0	*2.8		10^3 Cubic Feet Burned	129
Food and Agriculture - Other Not Classified								
3-02-999-98	Specify in Comments						Tons Processed (Input)	
3-02-999-99	Specify in Comments						Tons Produced (Finished)	
PRIMARY METAL PRODUCTION - MAJOR GROUPS 10 AND 33								
Aluminum Ore - Bauxite - 1051								
3-03-000-01	Crushing/Handling	6.0	0.0	0.0	0.0	0.0	Tons of Ore	
3-03-000-02	Drying Oven	1.2	*1.4		*0.004		Tons of Ore	60, 176
Aluminum Ore: Electro-Reduction - 3334								
3-03-001-01	Prebaked Reduction Cell	94.0	*57.3[d]	*0.003	*0.1	*369.0[d]	Tons of Molten Aluminum Produced	274, 298, 367
3-03-001-02	Horizontal Stud Soderberg Cell	98.0	*10.0[d]		*1.0	*244.0[d]	Tons of Molten Aluminum Produced	298, 367
3-03-001-03	Vertical Stud Soderberg	78.0	*17.0[d]		*1.0	*349.0[d]	Tons of Molten Aluminum Produced	298, 367
3-03-001-04	Materials Handling	10.0	*0.0	*0.0	*0.0		Tons of Molten Aluminum Produced	170
3-03-001-05	Anode Baking Furnace	3.0	*2.7[d]		*1.0	*66.0[d]	Tons of Molten Aluminum Produced	181
3-03-001-06	Degassing		0.0	0.0	0.0	0.0	Tons of Molten Aluminum Produced	
3-03-001-07	Roof Vents				*2.7		Tons of Molten Aluminum Produced	54
3-03-001-08	Prebake: Fugitive Emissions	5.0			*NEG		Tons of Molten Aluminum Produced	199
3-03-001-09	H.S.S.: Fugitive Emissions	10.0			*NEG		Tons of Molten Aluminum Produced	199

#Note that fugitive emissions are reported in units of lbs/process unit-year rather than lbs/ton product as in the NEDS Source Classification Codes and Emission Factor Listing dated October 1985.

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Aluminum Ore: Electro-Reduction - 3334 (Continued)								
3-03-001-10	V.S.S.: Fugitive Emissions	12.0			*NEG		Tons of Molten Aluminum Produced	199
3-03-001-11	Anode Baking: Fugitive Emissions				*NEG		Tons of Molten Aluminum Produced	199
Aluminum Hydroxide Calcining - 3334								
3-03-002-01	Overall Process	200.0	*27.8	*1.5	*0.02		Tons of Alumina Produced	208, 250
By-Product Coke Manufacturing - 3312								
3-03-003-02	Oven Charging	0.48	0.02	0.03	2.5	0.6	Tons Coal Charged	298, 301
3-03-003-03	Oven Pushing	1.15	*3.3	*0.03	0.2	0.07	Tons Coal Charged	135, 298, 301
3-03-003-04	Quenching	5.24	*0.4	*0.6	*0.02		Tons Coal Charged	102, 298
3-03-003-05	Coal Unloading	0.00011	0.0	0.0	0.0	0.0	Tons Coal Charged	
3-03-003-06	Oven Underfiring	0.58	4.0	*0.04	*2.0		Tons Coal Charged	131, 136
3-03-003-07	Coal Crushing/Handling		0.0	0.0	0.0	0.0	Tons Coal Charged	
3-03-003-08	Oven/Door Leaks	0.51	*0.1	0.01	1.5	0.6	Tons Coal Charged	94, 301
3-03-003-09	Coal Conveying		0.0	0.0	0.0	0.0	Tons Coal Processed	
3-03-003-10	Coal Crushing	0.11	0.0	0.0	0.0	0.0	Tons Coal Processed	298
3-03-003-11	Coal Screening		0.0	0.0	0.0	0.0	Tons Coal Processed	
3-03-003-12	Coke Crushing/Screening/Handling	*0.09[d]	0.0	0.0	0.0	0.0	Tons Coke Processed	
3-03-003-13	Coal Preheater	3.5			*0.3		Tons Coal Charged	57, 298
3-03-003-14	Topside Leaks	*0.09[d]	*0.1	*0.01	*1.5		Tons Coal Charged	357
3-03-003-15	Gas By-Product Plant				0.0		10^6 Cubic Feet Gas Processed	
3-03-003-16	Coal Storage Pile		0.0	0.0	0.0	0.0	Tons Coal Charged	
Coke Manufacture: Beehives - 3312								
3-03-004-01	General	200.0	0.0	0.0	8.0	1.0	Tons Coal Charged	
Primary Copper Smelters - 3331								
3-03-005-02	Multiple Hearth Roaster	45.0	280.0	*3.6	*0.009		Tons Concentrated Ore Processed	228
3-03-005-03	Reverberatory Smelting Furnace after Roaster	50.0	180.0	*5.8	*0.015		Tons Concentrated Ore Processed	228, 299
3-03-005-04	Converter (All Configurations)	36.0	623.0[s]	*NEG	*NEG		Tons Concentrated Ore Processed	58, 275
3-03-005-05	Fire (Furnace) Refining[r]	10.0	0.0		*NEG		Tons Concentrated Ore Processed	58
3-03-005-06	Ore Concentrate Dryer	10.0	1.0		*0.004		Tons Concentrated Ore Processed	60
3-03-005-07	Reverberatory Smelting Furnace with Ore Charging (without Roasting)	50.0	320.0	*10.3	*0.03		Tons Concentrated Ore Processed	228

---

[*] Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Primary Copper Smelters - 3331 (Continued)								
3-03-005-08	Refined Metal Finishing Operations		*0.0	*0.0	*0.0		Tons Concentrated Ore Processed	353
3-03-005-09	Fluidized-Bed Roaster		360.0		*NEG		Tons Concentrated Ore Processed	58
3-03-005-10	Electric Smelting Furnace	100.0	240.0		*NEG		Tons Concentrated Ore Processed	58
3-03-005-11	Electrolytic Refining		0.0	*0.0	*0.0		Tons Concentrated Ore Processed	182
3-03-005-12	Flash Smelting	140.0	820.0		*NEG		Tons Concentrated Ore Processed	58
3-03-005-13	Roasting: Fugitive Emissions	2.6	1.0		*NEG		Tons Concentrated Ore Processed	58
3-03-005-14	Reverberatory Furnace: Fugitive Emissions	0.4	4.0		*NEG		Tons Concentrated Ore Processed	58
3-03-005-15	Converter: Fugitive Emissions	4.4	130.0		*NEG		Tons Concentrated Ore Processed	58
3-03-005-16	Anode Refining Furnace: Fugitive Emissions	0.5	0.1		*NEG		Tons Concentrated Ore Processed	58
3-03-005-17	Slag Cleaning Furnace: Fugitive Emissions	8.0	6.0		*NEG		Tons Concentrated Ore Processed	58
3-03-005-18	Converter Slag Return: Fugitive Emissions		0.1		*NEG		Tons Concentrated Ore Processed	58
3-03-005-21	Noranda Reactor				*NEG		Tons Concentrated Ore Processed	58
3-03-005-22	Slag Cleaning Furnace	10.0	1.0		*NEG		Tons Concentrated Ore Processed	58
3-03-005-23	Reverberatory Furnace with Converter	36.0	740.0		*NEG		Tons Concentrated Ore Processed	58
3-03-005-24	Multi-Hearth Roaster with Reverberatory Furnace and Convertor or Fluid Bed Roaster with Electric Furnace with Convertor	36.0	600.0		*NEG		Tons Concentrated Ore Processed	58
3-03-005-25	Fluid Bed Roaster with Reverberatory Furnace and Convertor	36.0	540.0		*NEG		Tons Concentrated Ore Processed	58
3-03-005-26	Dryer with Electric Furnace and Cleaning Furnace and Convertor	36.0	820.0		*NEG		Tons Concentrated Ore Processed	58
3-03-005-27	Dryer with Flash Furnace and Convertor		240.0		*NEG		Tons Concentrated Ore Processed	58
3-03-005-28	Noranda Reactor and Convertor				*NEG		Tons Concentrated Ore Processed	58
3-03-005-99	Other Not Classified (Specify in Comments)						Tons Concentrated Ore Processed	

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO$_x$ Lbs/Unit	NO$_x$ Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Ferroalloy (Open Furnace) - 3313								
3-03-006-01	50% FeSi: Electric Smelting Furnaces	70.0	*0.07	*0.1	4.5		Tons Produced	298, 301 352, 360
3-03-006-02	75% FeSi: Electric Smelting Furnaces	316.0	*0.07	*0.1	*4.5		Tons Produced	298, 352, 354, 360
3-03-006-03	90% FeSi: Electric Smelting Furnaces	564.0	*0.07	*0.1	*4.5		Tons Produced	298, 352, 354, 360
3-03-006-04	Silicon Metal: Electric Smelting Furnaces	872.0	*0.07	*0.1	72		Tons Produced	298, 301 352, 360
3-03-006-05	Siliconmanganese: Electric Smelting Furnaces	192.0	0.07	*0.1	*4.5		Tons Produced	298, 299, 354, 360
3-03-006-10	Ore Screening				*0.0		Tons Processed	186
3-03-006-11	Ore Dryer				*0.004		Tons Processed	60
3-03-006-13	Raw Materials Storage				*0.0		Tons Processed	186
3-03-006-14	Raw Materials Transfer				*0.0		Tons Processed	186
3-03-006-15	Ferromanganese: Blast Furnace				*16		Tons Produced	59
3-03-006-16	Ferrosilicon: Blast Furnace				*16		Tons Produced	355
3-03-006-17	Cast House				*2.8		Tons Produced	356
3-03-006-99	Other Not Classified (Specify in Comments)						Tons Produced	
Ferroalloy (Semi-Covered Furnace) - 3313								
3-03-007-01	Ferromanganese: Electric Arc Furnace	12.0	0.02	*0.1	1.4		Tons Produced	298, 299, 301, 360
3-03-007-02	Electric Arc Furnace (Other Alloys Specify in Comments)						Tons Produced	
3-03-007-03	Ferrochromium - Electric Arc				*8.2		Tons Produced	59
3-03-007-04	Ferrochromium Silicon - Electric Arc Furnace				*8.2		Tons Produced	59
Iron Production - 3312								
3-03-008-01	Blast Furnace: Ore Charge	*110.0^{c}	0.0	0.0	0.0	*1,750.0^{c,t}	Tons Iron Produced	
3-03-008-02	Blast Furnace: Agglomerates Charge	*40.0^{c}	0.0	0.0	0.0	0.0	Tons Iron Produced	
Blast Furnace Slag								
3-03-008-04	Loader: Hi-Silt	*0.026^{d}	0.0	0.0	0.0	0.0	Tons Slag Transferred	
3-03-008-05	Loader: Lo-Silt	*0.0088^{d}	0.0	0.0	0.0	0.0	Tons Slag Transferred	
3-03-008-08	Slag Crushing and Sizing		*0.0	*0.0	*0.0		Tons Processed	191
3-03-008-09	Slag Removal and Dumping		*0.0	*0.0	*0.0		Tons Processed	191
Sintering - 3312								
3-03-008-11	Raw Material Stockpiles, Coke Breeze, Limestone, Ore Fines				*4.8		Tons Sinter Produced	57
3-03-008-12	Raw Material Transfer/Handling				*0.0		Tons Sinter Produced	195

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Sintering - 3312 (Continued)								
3-03-008-13 -	Windbox	11.1	*2.5^d	*0.3^d	*1.4^d	44.0	Tons Sinter Produced	
3-03-008-14 -	Sinter Discharge End	6.8	*NEG	*NEG	*0.0		Tons Sinter Produced	254, 307
3-03-008-15 -	Sinter Breaker				*0.0		Tons Sinter Produced	254
3-03-008-16 -	Sinter Hot Screening		*0.0	*0.0	*0.0		Tons Sinter Produced	191
3-03-008-17 -	Sinter Cooler	*3.0^d	*0.14	*NEG	*NEG		Tons Sinter Produced	97, 309
3-03-008-18 -	Sinter Cold Screening		*0.0	*0.0	*0.0		Tons Sinter Produced	191
3-03-008-19 -	Sinter Processing (Combined Code Includes 15, 16, 17, 18)	*0.8^d			*0.05		Tons Sinter Produced	95
3-03-008-20 -	Sinter Conveyor: Transfer Station	*0.026^d	0.0	0.0	0.0	0.0	Tons Sinter Transferred	
3-03-008-21 -	Unloading Ore, Pellets, Limestone into Blast Furnace	*0.0024^d	0.0	0.0	0.0	0.0	Tons Ore Transferred	
3-03-008-22 -	Blast Furnace Raw Materials Stockpiles: Ore, Pellets, Limestone, Coke, Sinter				*4.8		Tons Processed	198
3-03-008-23 -	Blast Furnace Charge Materials Transfer/Handling				*0.0		Tons Processed	195
3-03-008-24 -	Blast Heating Stoves				*0.01		Tons Processed	252
3-03-008-25 -	Cast House	0.6	*3.0	*0.03	*2.8		Tons Processed	343
3-03-008-26 -	Blast Furnace Slips	87.0			*0.0		Number of Slips	241
3-03-008-27 -	Lump Ore Unloading	*0.0003^d	0.0	0.0	0.0	0.0	Tons Ore Transferred	
Fugitive Emissions: Roads								
3-03-008-31 -	Unpaved Roads: LDV	1.8	0.0	0.0	0.0	0.0	Vehicle-Miles Traveled	
3-03-008-32 -	Unpaved Roads: MDV	7.3	0.0	0.0	0.0	0.0	Vehicle-Miles Traveled	
3-03-008-33 -	Unpaved Roads: HDV	14.0	0.0	0.0	0.0	0.0	Vehicle-Miles Traveled	
3-03-008-34 -	Paved Roads: All	0.78	0.0	0.0	0.0	0.0	Vehicle-Miles Traveled	
Steel Production - 3312								
3-03-009-01 -	Open Hearth Furnace: Stack	21.1	*1.4		*0.17		Tons Produced	57, 94
3-03-009-04 -	Electric Arc Furnace: Stack (Alloy Steel)	11.3	*0.7	*0.1	*0.35	18.0	Tons Produced	57, 93
3-03-009-06 -	Charging: EAF				*0.001		Tons Produced	188
3-03-009-07 -	Tapping: EAF				*0.002		Tons Produced	243
3-03-009-08 -	Electric Arc Furnace: Stack (Carbon Steel)	50.0	*0.7	*0.1	*0.35	18.0	Tons Produced	57, 253
3-03-009-10 -	Pickling		*0.0	*0.0	*0.0		Tons Produced	183
3-03-009-11 -	Soaking Pits		*NEG	*NEG	*0.02		Tons Produced	144, 276
3-03-009-12 -	Grinding		*0.0	*0.0	*0.0		Tons Produced	191
3-03-009-13 -	Basic Oxygen Furnace: Open Hood-Stack	28.5		*0.08	*0.001	139.0^u	Tons Produced	57, 96
3-03-009-14 -	Basic Oxygen Furnace: Closed Hood-Stack	28.5			*0.001	139.0^u	Tons Produced	57
3-03-009-15 -	Hot Metal (Iron) Transfer to Steelmaking Furnace	0.19			*0.001		Tons Produced	188

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Steel Production - 3312 (Continued)								
3-03-009-16	Charging: BOF	0.6			*0.001		Tons Produced	57
3-03-009-17	Tapping: BOF	0.92		*0.02	*0.002		Tons Produced	141, 243
3-03-009-18	Charging: Open Hearth				*0.001		Tons Produced	188
3-03-009-19	Tapping: Open Hearth				*0.002		Tons Produced	243
3-03-009-21	Teeming (Unleaded Steel)	0.07			*0.002		Tons Produced	255
3-03-009-22	Continuous Casting			*0.05	*NEG		Tons Produced	141, 235
3-03-009-23	Steel Furnace Slag Tapping and Dumping				*0.002		Tons Produced	243
3-03-009-24	Steel Furnace Slag Processing, Crushing and Sizing		*0.0	*0.0	*0.0		Tons Produced	191
3-03-009-25	Teeming (Leaded Steel)	0.81			*0.002		Tons Produced	255
3-03-009-31	Hot Rolling				*0.08		Tons Produced	57
3-03-009-32	Machine Scarfing	0.1	*NEG	*NEG	*NEG		Tons Produced	308
3-03-009-33	Reheat Furnaces		*0.8	*0.8	*0.01		Tons Produced	124
3-03-009-34	Heat Treating Furnaces, Annealing			*0.1	*0.004		Tons Produced	141, 221
3-03-009-35	Cold Rolling				*0.56		Tons Produced	57
3-03-009-36	Coating (Tin, Zinc, etc.)			*1.9	*0.07		Tons Produced	141, 142
3-03-009-98	Other Not Classified (Specify in Comments)						Tons Produced Each	
3-03-009-99	Other Not Classified (Specify in Comments)						Tons Produced	
Lead Smelters - 3332								
3-03-010-01	Sintering: Single Stream	106.5^{v}	275.0^{v}		*NEG		Tons of Concentrated Ore Processed	58
3-03-010-02	Blast Furnace Operation	180.5^{v}	22.5^{v}		*NEG		Tons of Concentrated Ore Processed	58
3-03-010-03	Dross Reverberatory Furnace	20.0	NEG		*NEG		Tons of Concentrated Ore Processed	58, 298, 299
3-03-010-04	Ore Crushing	2.0	0.0	0.0	0.0	0.0	Tons of Ore Crushed	298
3-03-010-05	Materials Handling (Includes 11, 12, 13, 04, 14)	5.0	*0.0	*0.0	*0.0		Tons of Lead Product	191
3-03-010-06	Sintering: Dual Stream Feed End	213.0	550.0		*NEG		Tons of Concentrated Ore Processed	58, 298, 299
3-03-010-07	Sintering: Dual Stream Discharge End				*NEG		Tons of Concentrated Ore Processed	58
3-03-010-08	Slag Fume Furnace	4.6	*2.9		*NEG		Tons of Lead Product	58, 189
3-03-010-09	Lead Drossing	0.48	*0.01	*12.8	*0.03		Tons of Lead Product	229
3-03-010-10	Crushing and Grinding	1.0	*0.0	*0.0	*0.0		Tons Processed	191, 298
3-03-010-11	Raw Material Unloading	$*0.4^{d}$	*0.0	*0.0	*0.0		Tons of Raw Material	191
3-03-010-12	Raw Material Storage Piles	$*0.3^{d}$	*0.0	*0.0	*0.0		Tons of Raw Material	191
3-03-010-13	Raw Material Transfer	0.5	*0.0	*0.0	*0.0		Tons of Raw Material	191
3-03-010-14	Sintering Charge Mixing	2.26			*NEG		Tons of Sinter	58
3-03-010-15	Sinter Crushing/Screening	1.5	*0.0	*0.0	*0.0		Tons of Sinter	191

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Lead Smelters - 3332 (Continued)								
3-03-010-16	Sinter Transfer	0.2	*0.0	*0.0	*0.0		Tons of Sinter	191
3-03-010-17	Sinter Fines Return Handling	9.0			*0.0		Tons of Sinter	195
3-03-010-18	Blast Furnace Charging				*0.0		Tons of Lead Product	195
3-03-010-19	Blast Furnace Tapping (Metal and Slag)	0.16			*0.0		Tons of Lead Product	195
3-03-010-20	Blast Furnace Lead Pouring	0.93			*NEG		Tons of Lead Product	58
3-03-010-21	Blast Furnace Slag Pouring	0.47			*NEG		Tons of Lead Product	58
3-03-010-22	Lead Refining/Silver Retort Building	1.8	*0.0	*0.0	*0.0		Tons of Lead Product	190
3-03-010-23	Lead Casting	0.87			*NEG		Tons of Lead Product	58
3-03-010-24	Reverberatory or Kettle Softening	3.0			*NEG		Tons of Lead Product	58
3-03-010-25	Sinter Machine Leakage	*0.68[d]			*NEG		Tons of Sinter	58
3-03-010-26	Sinter Dump Area	*0.01[d]			*NEG		Tons of Sinter	58
Molybdenum Ore Mining - 1061								
3-03-011-01	Mining: General		0.0	0.0	0.0	0.0	Hundreds of Tons Mined	
3-03-011-02	Milling: General		0.0	0.0	0.0	0.0	Hundreds of Tons Mined	
3-03-011-99	Processing (Specify in Comments)						Hundreds of Tons Mined	
Titanium Processing - 3339, 3369, 3356								
3-03-012-01	Chlorination			0.0	0.0	0.0	Tons Product	
3-03-012-02	Drying Titanium Sand Ore (Cyclone Exit)	0.5			*0.004		Tons Processed	60
3-03-012-99	Other Not Classified (Specify in Comments)						Tons Processed	
Gold Processing - 1041, 3341, 3339								
3-03-013-01	Mining/Processing		0.0	0.0	0.0	0.0	Tons of Ore	
Barium Ore Processing - 3295								
3-03-014-01	Ore Grinding		*0.0	0.0	*0.0		Tons Processed	191
3-03-014-02	Reduction Kiln		*0.0	*0.42	*0.04		Tons Processed	358
3-03-014-03	Dryers/Calciners				*0.004		Tons Processed	60
3-03-014-99	Others Not Classified (Specify in Comments)						Tons Processed	
Taconite Iron Ore Processing - 1011								
3-03-023-01	Primary Crushing	0.2	*0.0	*0.0	*0.0		Tons Pellets Produced	191
3-03-023-02	Fines Crushing	79.8	*0.0	*0.0	*0.0		Tons Pellets Produced	191
3-03-023-03	Ore Screening		*0.0	*0.0	*0.0		Tons Pellets Produced	191
3-03-023-04	Ore Transfer	0.1	*0.0	*0.0	*0.0		Tons Pellets Produced	191
3-03-023-05	Ore Storage		*0.0	*0.0	*0.0		Tons Pellets Produced	191
3-03-023-06	Dry Grinding/Milling		*0.0	*0.0	*0.0		Tons Pellets Produced	191
3-03-023-07	Bentonite Storage	0.04	*0.0	*0.0	*0.0		Tons Pellets Produced	191

[a] Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Taconite Iron Ore Processing - 1011 (Continued)								
3-03-023-08	Bentonite Blending	0.22	*0.0	*0.0	*0.0		Tons Pellets Produced	191
3-03-023-09	Traveling Grate Feed	0.64	*0.0	*0.0	*0.0		Tons Pellets Produced	191
3-03-023-10	Traveling Grate Discharge	1.32	*0.0	*0.0	*0.0		Tons Pellets Produced	191
3-03-023-11	Chip Regrinding		*0.0	*0.0	*0.0		Tons Pellets Produced	191
3-03-023-12	Indurating Furnace: Gas Fired	29.2	0.06	*1.6	*0.004		Tons Pellets Produced	237
3-03-023-13	Indurating Furnace: Oil Fired	29.2	0.13	*0.2	*0.003		Tons Pellets Produced	237
3-03-023-14	Indurating Furnace: Coal Fired	29.2	0.65	*0.04	*0.0002		Tons Pellets Produced	237
3-03-023-15	Pellet Cooler		*0.0	*0.0	*0.0		Tons Pellets Produced	358
3-03-023-16	Pellet Transfer	3.4	*0.0	*0.0	*0.0		Tons Pellets Produced	191
3-03-023-21	Haul Road: Rock	11.0	0.0	0.0	0.0	0.0	Vehicle-Miles Traveled	
3-03-023-22	Haul Road: Taconite	9.3	0.0	0.0	0.0	0.0	Vehicle-Miles Traveled	
Metal Mining - General Processes - 1011-1099[w]								
3-03-024-01	Primary Crushing (low moisture ore)	0.5	*0.0	*0.0	*0.0		Tons Ore Processed	191
3-03-024-02	Secondary Crushing (low moisture ore)	1.2	*0.0	*0.0	*0.0		Tons Ore Processed	191
3-03-024-03	Tertiary Crushing (low moisture ore)	2.7	*0.0	*0.0	*0.0		Tons Ore Processed	191
3-03-024-04	Material Handling (low moisture ore)	0.12[x]	*0.0	*0.0	*0.0		Tons Ore Processed	191
3-03-024-05	Primary Crushing (high moisture ore)	0.02	*0.0	*0.0	*0.0		Tons Ore Processed	191
3-03-024-06	Secondary Crushing (high moisture ore)	0.05	*0.0	*0.0	*0.0		Tons Ore Processed	191
3-03-024-07	Tertiary Crushing (high moisture ore)	0.06	*0.0	*0.0	*0.0		Tons Ore Processed	191
3-03-024-08	Material Handling (high moisture ore)	0.01	*0.0	*0.0	*0.0		Tons Ore Processed	191
3-03-024-09	Dry Grinding with Air Conveying	28.8	*0.0	*0.0	*0.0		Tons Ore Processed	191
3-03-024-10	Dry Grinding without Air Conveying, etc.	2.4	*0.0	*0.0	*0.0		Tons Ore Processed	191
3-03-024-11	Ore Drying	19.7[y]	*0.002	*1.6	*0.004		Tons Ore Processed	220
Zinc Smelting - 3333								
3-03-030-02	Multiple Hearth Roaster	227.0	1,100.0		0.0		Tons Processed	298
3-03-030-03	Sinter Strand	90.0	*0.65		*NEG		Tons Processed	58, 217
3-03-030-05	Vertical Retort/Electrothermal Furnace	100.0	*1.13		*NEG		Tons Processed	58, 218
3-03-030-06	Electrolytic Processor	3.0		*0.0	*0.0		Tons Processed	222
3-03-030-07	Flash Roaster	2,000.0	*404.4		*0.0		Tons Processed	219, 298
3-03-030-08	Fluid Bed Roaster	2,167.0	*223.5		*0.0		Tons Processed	219, 298
3-03-030-09	Raw Material Handling and Transfer	*4.0[d]	0.0	0.0	0.0	0.0	Tons Processed	
3-03-030-10	Sinter Breaking and Cooling	*1.5[d]	0.0	0.0	0.0	0.0	Tons Processed	

---

[*] Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Zinc Smelting - 3333 (Continued)								
3-03-030-11	Zinc Casting	*2.5[d]	0.0	0.0	0.0	0.0	Tons Processed	
3-03-030-12	Raw Material Unloading	*0.4[d]	0.0	0.0	0.0	0.0	Tons Processed	
3-03-030-14	Crushing/Screening		0.0	0.0	0.0	0.0	Tons Processed	
3-03-030-15	Zinc Melting		0.0	0.0	0.0	0.0	Tons Processed	
3-03-030-16	Alloying		0.0	0.0	0.0	0.0	Tons Processed	
Primary Metal Industries - Fuel Fired Equipment								
Process Heaters								
3-03-900-01	Distillate Oil (No. 2)		*140.0 S	*20.0	*0.20		10^3 Gallons Burned	129
3-03-900-02	Residual Oil		*159.0 S	*55.0	*0.28		10^3 Gallons Burned	129
3-03-900-03	Natural Gas		*0.6	*140.0	*2.8		10^6 Cubic Feet Burned	129
3-03-900-04	Process Gas		*950.0 S	*140.0	*2.8		10^6 Cubic Feet Burned	129
Incinerators								
3-03-900-11	Distillate Oil (No. 2)				*0.4		10^3 Gallons Burned	130
3-03-900-12	Residual Oil				*0.56		10^3 Gallons Burned	130
3-03-900-13	Natural Gas				*5.6		10^6 Cubic Feet Burned	130
3-03-900-14	Process Gas				*5.6		10^6 Cubic Feet Burned	130
Flares								
3-03-900-23	Natural Gas				*5.6		10^6 Cubic Feet Burned	130
3-03-900-24	Process Gas				*5.6		10^6 Cubic Feet Burned	130
Primary Metal Production - Fugitive Emissions[f]								
3-03-888-01	Specify in Comments Field#						Process Unit-Year	
3-03-888-02	Specify in Comments Field#						Process Unit-Year	
3-03-888-03	*Specify in Comments Field#*						*Process Unit-Year*	
3-03-888-04	Specify in Comments Field#						Process Unit-Year	
3-03-888-05	Specify in Comments Field#						Process Unit-Year	
Primary Metal Industries: Other Not Classified								
3-03-999-99	Other Not Classified (Specify in Comments)						Tons Produced	
SECONDARY METAL PRODUCTION - MAJOR GROUPS 33 AND 34								
Secondary Aluminum - 3341, 3353, 3354, 3355, 3361, 3411, 3497								
3-04-001-01	Sweating Furnace	14.5	*3.5	*0.6	*2.4		Tons Produced	149, 150, 197
3-04-001-02	Smelting Furnace/Crucible	1.9	*2.5	*1.7	*2.5		Tons Metal Produced	344
3-04-001-03	Smelting Furnace/Reverberatory	4.3	*0.9	*0.76	*0.2		Tons Metal Produced	122, 144, 145

#Note that fugitive emissions are reported in units of lbs/process unit-year rather than lbs/ton product as in the NEDS Source Classification Codes and Emission Factor Listing dated October 1985.

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Secondary Aluminum - 3341, 3353, 3354, 3355, 3361, 3411, 3497 (Continued)								
3-04-001-04	Fluxing (Chlorination)	1,000.0	0.0	0.0	0.0	0.0	Tons of Chlorine Used	
3-04-001-05	Fluxing (Fluoridation)		*0.0	*0.0	*0.0		Tons Metal Produced	187
3-04-001-06	Degassing		0.0	0.0	0.0	0.0	Tons Metal Produced	
3-04-001-07	Hot Dross Processing	0.22	0.0	0.0	0.0	0.0	Tons Metal Produced	
3-04-001-08	Crushing/Screening		0.0	0.0	0.0	0.0	Tons Metal Produced	
3-04-001-09	Burning/Drying		*3.0	*0.5	*32		Tons Metal Produced	143, 147, 328
3-04-001-10	Foil Rolling				*1.3	0.0	Tons Produced	143
3-04-001-11	Foil Converting				*2.4	0.0	Tons Produced	245
3-04-001-12	Annealing Furnace		*0.002	*1.5	*0.004		Tons Metal Produced	242
3-04-001-13	Slab Furnace		*0.002	*1.5	*0.004		Tons Metal Produced	242
3-04-001-14	Pouring/Casting		*0.02	*0.01	*0.14		Tons Metal Charged	196
3-04-001-20	Can Manufacture			*0.7	*300	0.0	Tons Produced	143, 359
3-04-001-50	Rolling/Drawing/Extruding			*0.7	*0.09	0.0	Tons Produced	143, 145
Secondary Copper Smelting and Alloying (Brass/Bronze Melt) - 3341, 3362								
3-04-002-07	Scrap Dryer (Rotary)	275.0^a	*1.5	*18	*0.004		Tons of Charge	60, 122, 141
3-04-002-08	Wire Burning (Incinerator)	275.0^a	*12.8	*1.7	*0.6	33.5	Tons of Charge	277
3-04-002-09	Sweating Furnace	15.0^a			*0.12		Tons of Charge	207
Cupolas								
3-04-002-10	Charge with Scrap Copper	0.0003			*0.18		Tons of Charge	249
3-04-002-11	Charge with Insulated Copper Wire	230.0			*447.0		Tons of Coke-free Charge	84
3-04-002-12	Charge with Scrap Copper and Brass	70.0			*0.18		Tons of Charge	249
Reverberatory Furnace								
3-04-002-14	Charge with Copper	5.1			*5.2		Tons of Charge	248
3-04-002-15	Charge with Brass and Bronze	36.0		*0.08	*5.2		Tons of Charge	141, 248
Rotary Furnace								
3-04-002-17	Charge with Brass and Bronze	300.0		*0.6	*2.4		Tons of Charge	147, 247
Crucible and Pot Furnaces								
3-04-002-19	Charge with Brass and Bronze	21.0	*0.5		*6.7		Tons of Charge	140
Electric Arc Furnace								
3-04-002-20	Charge with Copper	5.0			*3.9		Tons of Charge	239
3-04-002-21	Charge with Brass and Bronze	11.0	*0.03		*NEG		Tons of Charge	193, 361
Electric Induction Furnace								
3-04-002-23	Charge with Copper	7.0	*0.03	*NEG	*NEG		Tons of Charge	127
3-04-002-24	Charge with Brass and Bronze	20.0	*0.03	*NEG	*NEG		Tons of Charge	193, 309
Fugitive Emissions								
3-04-002-30	Scrap Metal Pretreatment		*0.0	*0.0	*0.0		Tons of Charge	199
3-04-002-31	Scrap Dryer	13.75	*0.0	*0.0	*0.0		Tons of Charge	199

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Fugitive Emissions (Continued)								
3-04-002-32	- Wire Incinerator	13.75	*0.0	*0.0	*0.0		Tons of Charge	199
3-04-002-33	- Sweating Furnace	0.75	*0.0	*0.0	*0.0		Tons of Charge	199
3-04-002-34	- Cupola Furnace	3.66	*0.0	*0.0	*0.0		Tons of Charge	199
3-04-002-35	- Reverberatory Furnace	5.27	*0.0	*0.0	*0.0		Tons of Charge	199
3-04-002-36	- Rotary Furnace	4.43	*0.0	*0.0	*0.0		Tons of Charge	199
3-04-002-37	- Crucible Furnace	0.49	*0.0	*0.0	*0.0		Tons of Charge	199
3-04-002-38	- Electric Induction Furnace	0.14	*0.0	*0.0	*0.0		Tons of Charge	199
3-04-002-39	- Casting Operations	0.015	*0.0	*0.0	*0.0		Tons of Castings Produced	199
3-04-002-99	- Other Not Classified (Specify in Comments)						Tons Produced	
Gray Iron Foundries - 3321								
3-04-003-01	- Cupola	13.8	1.2 S	*0.1[d]	*0.18	145.0	Tons Metal Charged	57, 298, 299
3-04-003-02	- Reverberatory Furnace	2.1	*180.0	*3.9	*0.015	0.0	Tons Metal Charged	298, 362
3-04-003-03	- Electric Induction Furnace	0.9	NEG	*NEG	*NEG	0.0	Tons Metal Charged	127, 298, 299
3-04-003-04	- Electric Arc Furnace	12.7	*0.25	0.32	0.18	19.0	Tons Metal Charged	298, 305
3-04-003-05	- Annealing Operation			*1.0	*0.10		Tons Processed	149, 185
3-04-003-10	- Inoculation	4.0			*0.005		Tons Inoculated	57
3-04-003-15	- Charge Handling	0.6	*NEG	*NEG	*NEG		Tons Metal Charged	311
3-04-003-20	- Pouring/Casting	5.0	*0.02	*0.01	*0.14		Tons Metal Charged	57, 122, 141
3-04-003-25	- Castings Cooling	10.0	*NEG	*NEG	*NEG		Tons Metal Charged	311
3-04-003-31	- Casting Shakeout	32.0	*0.0	*0.0	*1.2		Tons Metal Charged	57, 280
3-04-003-32	- Casting Knockout		*0.0	*0.0	*1.2		Tons Sand Handled	57, 280
3-04-003-33	- Shakeout Machine		*0.0	*0.0	*1.2		Tons Sand Handled	57, 280
3-04-003-40	- Castings Grinding/Cleaning	17.0	0.0	0.0	0.0	0.0	Tons Metal Charged	
3-04-003-41	- Casting Cleaning/Tumblers		*0.0	*0.0	*0.0		Tons Castings Cleaned	246
3-04-003-42	- Casting Cleaning/Chippers		*0.0	*0.0	*0.0		Tons Castings Cleaned	246
3-04-003-50	- Sand Grinding/Handling	*0.65[d]	*0.0	*0.0	*0.0		Tons Sand Handled	191
3-04-003-51	- Core Ovens	*2.71[d]	*0.32	*0.5	*0.0008		Tons Sand Handled	194
3-04-003-52	- Sand Grinding/Handling	40.0	*0.0	*0.0	*0.0		Tons Metal Charged	191
3-04-003-53	- Core Ovens	1.1	*0.32	*0.5	*0.0008		Tons Metal Charged	194
3-04-003-54	- Core Ovens		*0.33	*0.5	*0.0008		Gallons Core Oil Used	194
3-04-003-55	- Sand Dryer		*0.002	*1.6	*0.004		Tons Sand Handled	220
3-04-003-56	- Sand Silo		*0.0	*0.0	*0.0		Tons Sand Handled	246
3-04-003-57	- Conveyors/Elevators		*0.0	*0.0	*0.0		Tons Sand Handled	246
3-04-003-58	- Sand Screens		*0.0	*0.0	*0.0		Tons Sand Handled	246
3-04-003-60	- Castings Finishing	0.01[d]	*0.0	*0.0	*0.0		Tons Metal Charged	246
3-04-003-70	- Shell Core Machine		*0.32	*0.5	*0.0008		Tons Cores Produced	281
3-04-003-71	- Core Machines/Other		*0.32	*0.5	*0.0008		Tons Cores Produced	281
3-04-003-98	- Other Not Classified (Specify in Comments)						Gallons	
3-04-003-99	- Other Not Classified (Specify in Comments)						Tons Metal Charged	

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Secondary Lead Smelting - 3341, 3369								
3-04-004-01	Pot Furnace	0.8	0.0	0.0	0.0	0.0	Tons Metal Charged	
3-04-004-02	Reverberatory Furnace	323	80.0	*0.3	*NEG		Tons Metal Charged	58, 209, 298
3-04-004-03	Blast Furnace (Cupola)	307	53.0	*0.1	*NEG		Tons Metal Charged	58, 184, 298
3-04-004-04	Rotary Sweating Furnace	70.0			*NEG		Tons Metal Charged	58
3-04-004-05	Reverberatory Sweating Furnace	51.0			*NEG		Tons Metal Charged	58
3-04-004-06	Pot Furnace Heater: Distillate Oil		*144.0 S	*20.0	*0.20		10^3 Gallons Burned	129
3-04-004-07	Pot Furnace Heater: Natural Gas		*0.6	*140.0	*2.8		10^6 Cubic Feet Burned	129
3-04-004-08	Barton Process Reactor (Oxidation Kettle)	40.0	0.0	0.0	0.0	0.0	Tons Lead Oxide Produced	
3-04-004-09	Casting	0.87	0.0	0.0	0.0	0.0	Tons of Lead Cast	
3-04-004-10	Battery Breaking		0.0	0.0	0.0	0.0	Tons Metal Charged	
3-04-004-11	Scrap Crushing		0.0	0.0	0.0	0.0	Tons Metal Charged	
3-04-004-12	Sweating Furnace: Fugitive	2.55			*0.0		Tons Metal Charged	199
3-04-004-13	Smelting Furnace: Fugitive	16.5			*0.0		Tons Metal Charged	199, 298
3-04-004-14	Kettle Refining: Fugitive	0.002			*0.0		Tons Metal Charged	199, 298
3-04-004-99	Other Not Classified (Specify in Comments)						Tons Processed	
Lead Battery Manufacture - 3691								
3-04-005-05	Overall Process	139.0	0.0	0.0	0.0	0.0	10^3 Batteries Produced	
3-04-005-06	Grid Casting	2.84	0.0	0.0	0.0	0.0	10^3 Batteries Produced	298
3-04-005-07	Paste Mixing	3.92	0.0	0.0	0.0	0.0	10^3 Batteries Produced	298
3-04-005-08	Lead Oxide Mill (Baghouse Outlet)	0.11	0.0	0.0	0.0	0.0	10^3 Batteries Produced	
3-04-005-09	Three Process Operation	84	0.0	0.0	0.0	0.0	10^3 Batteries Produced	298
3-04-005-10	Lead Reclaiming Furnace	6.68	0.0	0.0	0.0	0.0	10^3 Batteries Produced	
3-04-005-11	Small Parts Casting	0.19	0.0	0.0	0.0	0.0	10^3 Batteries Produced	
3-04-005-12	Formation	32.4	0.0	0.0	0.0	0.0	10^3 Batteries Produced	
3-04-005-13	Barton Process: Oxidation Kettle		*0.0	*0.0	*0.0	*0.0	Tons Processed	333
3-04-005-21	Overall Process		*0.0	*0.0	*0.0	*0.0	Tons Processed	333
3-04-005-22	Grid Casting		*0.0	*0.0	*0.0	*0.0	Tons Processed	333
3-04-005-23	Paste Mixing		*0.0	*0.0	*0.0	*0.0	Tons Processed	333
3-04-005-24	Lead Oxide Mill (Baghouse Outlet)		*0.0	*0.0	*0.0	*0.0	Tons Processed	333
3-04-005-25	Stacking/PB Burn Battery Assembly		*0.0	*0.0	*0.0	*0.0	Tons Processed	333
3-04-005-26	Lead Reclaiming Furnace		*0.0	*0.0	*0.0	*0.0	Tons Processed	333
3-04-005-27	Small Parts Casting		*0.0	*0.0	*0.0	*0.0	Tons Processed	333
3-04-005-28	Formation		*0.0	*0.0	*0.0	*0.0	Tons Processed	333
3-04-005-99	Other Not Classified (Specify in Comments)						10^3 Batteries Produced	
Magnesium - 3341								
3-04-006-01	Pot Furnace	4.0		*2.5	*2.4		Tons Processed	149, 247
3-04-006-99	Other Not Classified (Specify in Comments)						Tons Processed	

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Steel Foundry - 3324, 3325								
3-04-007-01	Electric Arc Furnace	13.0	*0.25	0.2	*0.35		Tons Processed	252, 305
3-04-007-02	Open Hearth Furnace	11.0		0.01	*0.17		Tons Processed	252
3-04-007-03	Open Hearth Furnace with Oxygen Lance	10.0		0.0	*0.17		Tons Processed	252
3-04-007-04	Heat-Treating Furnace		*470	*80	*0.02		Tons Processed	148
3-04-007-05	Electric Induction Furnace	0.1	0.0	0.0	0.0	0.0	Tons Processed	
3-04-007-06	Sand Grinding/Handling in Mold and Core Making	0.65	*0.0	*0.0	*0.0		Tons Processed	191
3-04-007-07	Core Ovens	2.71	*0.32	*0.05	*0.0008		Tons Processed	194
3-04-007-08	Pouring and Casting	*5.0[c]	*0.02	*0.01	*0.14		Tons Metal Processed	196
3-04-007-09	Casting Shakeout	*32.0[c]		*2.4	*1.2		Tons Metal Processed	196
3-04-007-10	Casting Knockout				*1.2		Tons Sand Handled	196
3-04-007-11	Castings Cleaning	*17.0[c]	*0.0	*0.0	*0.0		Tons Metal Processed	246
3-04-007-12	Charge Handling	*0.6[c]			*0.0		Tons Metal Processed	356
3-04-007-13	Castings Cooling	*10.0[c]	*NEG	*NEG	*NEG		Tons Metal Processed	353
3-04-007-14	Shakeout Machine		*0.0	*0.0	*1.2		Tons Sand Handled	196
3-04-007-15	Finishing: Specify in Comments	*0.01[d]	*0.4	*87	*1.1		Tons Metal Processed	345
3-04-007-16	Sand Grinding and Handling	*40.0[c]	*0.0	*0.0	*0.0		Tons Metal Processed	191
3-04-007-17	Core Ovens	1.1	*0.32	*0.05	*0.0008		Tons Metal Processed	194
3-04-007-18	Core Ovens		*0.33	*0.05	*0.0008		Gallons Core Oil Used	194
3-04-007-20	Sand Dryer		*0.002	*1.6	*0.004		Tons Sand Handled	220
3-04-007-21	Sand Silo		*0.0	*0.0	*0.0		Tons Sand Handled	246
3-04-007-22	Muller		*0.0	*0.0	*0.0		Tons Sand Handled	358
3-04-007-23	Conveyors/Elevators		*0.0	*0.0	*0.0		Tons Sand Handled	246
3-04-007-24	Sand Screens		*0.0	*0.0	*0.0		Tons Sand Handled	246
3-04-007-25	Casting Cleaning/Tumblers		*0.0	*0.0	*0.0		Tons Castings Cleaned	246
3-04-007-26	Casting Cleaning/Chippers		*0.0	*0.0	*0.0		Tons Castings Cleaned	246
3-04-007-30	Shell Core Machine		*0.32	*0.5	*0.0008		Tons Cores Produced	281
3-04-007-31	Core Machines/Other		*0.32	*0.5	*0.0008		Tons Cores Produced	281
3-04-007-99	Other Not Classified (Specify in Comments)						Tons Processed	
Secondary Zinc Production - 3341								
3-04-008-01	Retort Furnace	47.0			*0.0		Tons Produced	323
3-04-008-02	Horizontal Muffle Furnace	45.0			*2.4		Tons Produced	321
3-04-008-03	Pot Furnace	0.1	*0.002	*1.9	*2.4		Tons Produced	145, 251, 327
3-04-008-05	Galvanizing Kettle	5.0	*0.002	*0.4	*0.0		Tons Produced	141, 251, 325
3-04-008-06	Calcining Kiln	89.0	*18.3		*0.06		Tons Produced	122, 250
3-04-008-07	Concentrate Dryer				*0.004		Tons Produced	60
3-04-008-09	Rotary Sweat Furnace	18.0		*0.2	*2.4		Tons Produced	149, 327
3-04-008-10	Muffle Sweat Furnace	21.4			*2.4		Tons Produced	327
3-04-008-11	Electric Resistance Sweat Furnace	10.0			*2.4		Tons Produced	327
3-04-008-12	Crushing/Screening of Zinc Residues	4.25	*0.0	*0.0	*0.0		Tons Residue	191

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Secondary Zinc Production - 3341 (Continued)								
3-04-008-14	Kettle-Sweat Furnace (Clean Metallic Scrap)	0.0			*0.0		Tons Produced	323
3-04-008-18	Reverberatory Sweat Furnace (Clean Metallic Scrap)	0.0			*0.0		Tons Produced	323
3-04-008-24	Kettle-Sweat Furnace (General Metallic Scrap)	11.0			*2.4		Tons Produced	321
3-04-008-28	Reverberatory Sweat Furnace (General Metallic Scrap)	13.0			*2.4		Tons Produced	321
3-04-008-34	Kettle-Sweat Furnace (Residual Scrap)	25.0			*2.4		Tons Produced	321
3-04-008-38	Reverberatory Sweat Furnace (Residual Scrap)	32.0			*2.4		Tons Produced	321
3-04-008-40	Alloying				*0.0		Tons Produced	325
3-04-008-41	Scrap Melting: Crucible				*2.5		Tons Produced	248
3-04-008-42	Scrap Melting: Reverberatory Furnace				*5.2		Tons Produced	248
3-04-008-43	Scrap Melting: Electric Induction Furnace				*0.18		Tons Produced	249
3-04-008-51	Retort and Muffle Distillation: Pouring	0.6			*NEG		Tons Produced	322
3-04-008-52	Retort and Muffle Distillation: Casting	0.3			*NEG		Tons Produced	322
3-04-008-53	Graphite Rod Distillation				*NEG		Tons Produced	326
3-04-008-54	Retort Distillation/Oxidation	30.0	*20	*7.9	*0.0		Tons Zinc Oxide Produced	146, 149, 323
3-04-008-55	Muffle Distillation/Oxidation	30.0	*40	*110	*0.0		Tons Zinc Oxide Produced	146, 149, 323
3-04-008-61	Reverberatory Sweating	1.3			*2.4		Tons Produced	321
3-04-008-62	Rotary Sweating	0.9			*2.4		Tons Produced	327
3-04-008-63	Muffle Sweating	1.07			*2.4		Tons Produced	327
3-04-008-64	Kettle (Pot) Sweating	0.56			*2.4		Tons Produced	321
3-04-008-65	Electric Resistance Sweating	0.5			*2.4		Tons Scrap Processed	327
3-04-008-66	Sodium Carbonate Leaching		*NEG	*NEG	*NEG		Tons Produced	324
3-04-008-67	Kettle (Pot) Melting Furnace	0.005			*2.4		Tons Produced	321
3-04-008-68	Crucible Melting Furnace	0.005			*2.5		Tons Produced	248
3-04-008-69	Reverberatory Melting Furnace	0.005			*5.2		Tons Produced	248
3-04-008-70	Electric Induction Melting	0.005			*0.18		Tons Produced	249
3-04-008-71	Alloying Retort Distillation				*0.0		Tons Produced	323
3-04-008-72	Retort and Muffle Distillation	2.36			*NEG		Tons Produced	322
3-04-008-73	Casting	0.015			*NEG		Tons Produced	322
3-04-008-74	Graphite Rod Distillation				*NEG		Tons Produced	326
3-04-008-75	Retort Distillation/Oxidation				*0.0		Tons Produced	323
3-04-008-76	Muffle Distillation/Oxidation				*NEG		Tons Produced	326
3-04-008-77	Retort Reduction				*NEG		Tons Produced	247
3-04-008-99	Other Not Classified (Specify in Comments)						Tons Produced	

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Malleable Iron - 3322								
3-04-009-01	Annealing			*0.6	*0.1		Tons Metal Charged	142, 149
3-04-009-99	Other Not Classified (Specify in Comments)						Tons Metal Charged	
Nickel - 3341								
3-04-010-01	Flux Furnace		*0.002	*1.5	*0.004		Tons Processed	363
3-04-010-02	Mixing/Blending/Grinding/Screening		*0.0	*0.0	*0.0		Tons Processed	191
3-04-010-04	Heat Treat Furnace		*0.002	*1.5	*0.004		Tons Processed	363
3-04-010-05	Induction Furnace (Inlet Air)		*0.03		*NEG		Tons Processed	364
3-04-010-06	Induction Furnace (Under Vacuum)		*0.03		*NEG		Tons Processed	364
3-04-010-07	EAF with Carbon Electrode		*57.3	*0.003	*0.1		Tons Processed	365
3-04-010-08	EAF		*0.25	*0.32	*0.18		Tons Processed	353
3-04-010-10	Finishing: Pickling/Neutralizing		*0.0	*0.0	*0.0		Tons Processed	365
3-04-010-11	Finishing: Grinding		*0.0	*0.0	*0.0		Tons Processed	353
3-04-010-99	Other Not Classified (Specify in Comments)						Tons Processed	
Furnace Electrode Manufacture - 3624								
3-04-020-01	Calcination				*0.06		Tons Processed	207
3-04-020-02	Mixing		0.0	0.0	0.0	0.0	Tons Processed	
3-04-020-03	Pitch Treating		0.0	0.0	*NEG		Tons Processed	285
3-04-020-04	Bake Furnaces		*1.6		*1.0		Tons Processed	210, 248
3-04-020-99	Other Not Classified (Specify in Comments)						Tons Processed	
Metal Heat Treating - 3398								
3-04-022-01	Furnace: General		*0.002	*4.0	*0.1		Tons Metal Processed	145, 224, 251
3-04-022-10	Quench Bath		*NEG	*NEG	*280		Tons Metal Processed	143, 307
Lead Cable Coating - 3357, 3315								
3-04-040-01	General	0.6					Tons Lead Processed	
Miscellaneous Casting and Fabricating - 3300-3399								
3-04-049-01	Wax Burnout Oven				*NEG		Tons of Wax Burned	76
3-04-050-01	Other Not Classified (Specify in Comments)						Tons Produced	
3-04-050-99	Other Not Classified (Specify in Comments)						Each	
Secondary Metal Production - Fugitive Emissions[f]								
3-04-888-01	Specify in Comments Field						Tons Product	
3-04-888-02	Specify in Comments Field						Tons Product	
3-04-888-03	Specify in Comments Field						Tons Product	
3-04-888-04	Specify in Comments Field						Tons Product	
3-04-888-05	Specify in Comments Field						Tons Product	

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Secondary Metal Production - Fuel Fired Equipment								
Process Heaters								
3-04-900-01	Distillate Oil (No. 2)		*144.0 S	*20.0	*0.20		10^3 Gallons Burned	129
3-04-900-02	Residual Oil		*159.0 S	*55.0	*0.28		10^3 Gallons Burned	129
3-04-900-03	Natural Gas		*0.6	*140.0	*2.8		10^6 Cubic Feet Burned	129
3-04-900-04	Process Gas		*950.0 S	*140.0	*2.8		10^6 Cubic Feet Burned	129
Incinerators								
3-04-900-11	Distillate Oil (No. 2)				*0.4		10^3 Gallons Burned	130
3-04-900-12	Residual Oil				*0.56		10^3 Gallons Burned	130
3-04-900-13	Natural Gas				*5.6		10^6 Cubic Feet Burned	130
3-04-900-14	Process Gas				*5.6		10^6 Cubic Feet Burned	130
Flares								
3-04-900-023	Natural Gas				*5.6		10^6 Cubic Feet Burned	130
3-04-900-024	Process Gas				*5.6		10^6 Cubic Feet Burned	130
Secondary Metal Production - Other Not Classified								
3-04-999-99	Other Not Classified (Specify in Comments)						Tons Processed	
MINERAL PRODUCTS - MAJOR GROUPS 11, 12, 14, 28, 29, 32, 44								
Asphalt Roofing Manufacture - 2952								
3-05-001-01	Asphalt Blowing: Saturant	7.2	0.0	0.0	1.46	0.27	Tons Asphalt Processed	
3-05-001-02	Asphalt Blowing: Coating	26.7	0.0	0.0	1.86	0.27	Tons Asphalt Processed	
3-05-001-03	Felt Saturation: Dipping Only	0.5	0.0	0.0	0.02	0.02	Tons Asphalt Shingle	
3-05-001-04	Felt Saturation: Dipping/Spraying	3.14	0.0	0.0	0.03	0.25	Tons Asphalt Shingle	
3-05-001-10	Blowing		*0.0	*0.0	*0.09		Tons Saturated Felt	216
3-05-001-11	Dipping Only		*0.0	*0.0	*0.02		Tons Saturated Felt	216
3-05-001-12	Spraying Only		*0.0	*0.0	*0.01		Tons Saturated Felt	216
3-05-001-13	Dipping/Spraying		*0.0	*0.0	*0.03		Tons Saturated Felt	216
3-05-001-98	Not Classified (Specify in Comments)						Gallons	
Asphaltic Concrete - 2951								
3-05-002-01	Rotary Dryer, Conventional Plant	45.0	*0.073[bb]	0.036	0.028	0.038	Tons Produced	301
3-05-002-02	Hot Elevators, Screens, Bins and Mixer	0.2	*0.09	*0.03	*0.0		Tons Produced	134
3-05-002-03	Storage Piles	*0.33[cc]			*NEG		Tons Produced	272
3-05-002-04	Cold Aggregate Handling	0.1	*0.12	*0.0	*0.13		Tons Produced	169
3-05-002-05	Drum, Dryer Hot Asphalt Plants	4.9	0.0	0.0	0.0	0.0	Tons of Asphalt	
3-05-002-06	Asphalt Heater (Natural Gas)		*0.6	*140.0	*2.8		10^6 Cubic Feet Burned	129
3-05-002-07	Asphalt Heater (Residual Oil)		*159.0 S	*55.0	*0.28		10^3 Gallons Burned	129
3-05-002-08	Asphalt Heater (Distillate Oil)		*144.0 S	*20.0	*0.20		10^3 Gallons Burned	129

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Brick Manufacturing - 3251								
3-05-003-01	Raw Material Drying	70.0	*0.002	0.0	*0.004		Tons Raw Material	220
3-05-003-02	Raw Material Grinding	76.0	0.0	0.0	0.0	0.0	Tons Raw Material	
3-05-003-03	Storage of Raw Materials	34.0	0.0	0.0	0.0	0.0	Tons Material Stored	
3-05-003-07	Process Calcining				*0.02		Tons Raw Material	223
3-05-003-08	Screening	20	0.0	0.0	0.0	0.0	Tons Raw Material	298
3-05-003-09	Process Blending and Mixing		0.0	0.0	0.0	0.0	Tons Raw Material	
3-05-003-11	Curing and Firing: Gas-Fired Tunnel Kilns	0.02	NEG	0.18	0.03	0.06	Tons Produced	298-302
3-05-003-12	Curing and Firing: Oil-Fired Tunnel Kilns	0.6	4.0 S	1.1	0.07	0.12	Tons Brick Produced	301, 302
3-05-003-13	Curing and Firing: Coal-Fired Tunnel Kilns	0.67 A	7.31 S	1.45	0.01	1.43	Tons Produced	298-302
3-05-003-14	Curing and Firing: Gas-Fired Periodic Kilns	0.065	NEG	0.5	0.01	0.15	Tons Produced	298-302
3-05-003-15	Curing and Firing: Oil-Fired Periodic Kilns	0.88	5.9 S	1.62	0.01	0.19	Tons Produced	298, 300-302
3-05-003-16	Curing and Firing: Coal-Fired Periodic Kilns	18.84	12.13 S	2.35	0.02	2.39	Tons Produced	298-302
3-05-003-98	Other Not Classified (Specify in Comments)						Gallons	
Calcium Carbide - 2819								
3-05-004-01	Electric Furnace (Hoods and Main Stack)	24.0	3.0		*NEG		Tons Produced	285
3-05-004-02	Coke Dryer	2.0	3.0	*0.2	*0.0		Tons Produced	141
3-05-004-03	Furnace Room Vents	26.0	0.0		*NEG		Tons Produced	285
3-05-004-04	Tap Fume Vents		0.0		*NEG		Tons Produced	285
3-05-004-05	Primary Secondary/Crushing		0.0	*0.0	*0.0		Tons Produced	191
3-05-004-06	Circular Charging: Conveyor		0.0		*NEG		Tons Produced	285
Castable Refractory - 3255								
3-05-005-01	Raw Material Dryer	30.0	*0.002	*1.6	*0.004		Tons Feed Material	220
3-05-005-02	Raw Material Crushing/Processing	120.0	0.0	0.0	0.0	0.0	Tons Feed Material	
3-05-005-03	Electric Arc Melt	50.0			*NEG		Tons Feed Material	119
3-05-005-04	Curing Oven	0.2	*0.0	*0.16	*1.0		Tons Feed Material	119, 338
3-05-005-05	Molding and Shakeout	25.0	*0.0	*0.0	*0.0005		Tons Feed Material	170
3-05-005-98	Other Not Classified (Specify in Comments)						Gallons	
3-05-005-99	Other Not Classified (Specify in Comments)						Tons Feed Material	
Cement Manufacturing - Dry Process - 3241								
3-05-006-06	Kilns[dd]	256	10.2	2.8	*0.02		Tons Cement Produced	107, 298, 300
3-05-006-07	Raw Material Unloading	*0.2[d]	0.0	0.0	0.0	0.0	Tons Material Unloaded	

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO$_x$ Lbs/Unit	NO$_x$ Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Cement Manufacturing - Dry Process - 3241 (Continued)								
3-05-006-08	Raw Material Piles	*4.0^d	0.0	0.0	0.0	0.0	Tons in Piles	
3-05-006-09	Primary Crushing	*0.5^c	0.0	0.0	0.0	0.0	Tons Processed	
3-05-006-10	Secondary Crushing	*1.5^c	0.0	0.0	0.0	0.0	Tons Processed	
3-05-006-11	Screening		0.0	0.0	0.0	0.0	Tons Processed	
3-05-006-12	Raw Material Transfer	*0.3^d	0.0	0.0	0.0	0.0	Tons Handled	
3-05-006-13	Raw Material Grinding and Drying	64.0	0.0	0.0	0.0	0.0	Tons Cement Produced	
3-05-006-14	Clinker Cooler	9.2	0.0	0.0	0.0	0.0	Tons Cement Produced	298
3-05-006-15	Clinker Piles		0.0	0.0	0.0	0.0	Tons Cement Produced	
3-05-006-16	Clinker Transfer		0.0	0.0	0.0	0.0	Tons Cement Produced	
3-05-006-17	Clinker Grinding	96.0	0.0	0.0	0.0	0.0	Tons Cement Produced	298
3-05-006-18	Cement Silos		0.0	0.0	0.0	0.0	Tons Cement Produced	
3-05-006-19	Cement Load Out	*0.24^d	0.0	0.0	0.0	0.0	Tons Cement Produced	
Wet Process - 3241								
3-05-007-06	Kilns^{dd}	228.0	10.2	2.8	0.0	0.0	Tons Cement Produced	300
3-05-007-07	Raw Material Unloading	*0.2^d	0.0	0.0	0.0	0.0	Tons of Material Unloaded	
3-05-007-08	Raw Material Piles	*4.0^d	0.0	0.0	0.0	0.0	Tons in Piles	
3-05-007-09	Primary Crushing	*0.5^c	0.0	0.0	0.0	0.0	Tons Processed	
3-05-007-10	Secondary Crushing	*1.5^c	0.0	0.0	0.0	0.0	Tons Processed	
3-05-007-11	Screening		0.0	0.0	0.0	0.0	Tons Processed	
3-05-007-12	Raw Material Transfer	*0.3^d	0.0	0.0	0.0	0.0	Tons Handled	
3-05-007-14	Clinker Cooler		0.0	0.0	0.0	0.0	Tons Cement Produced	
3-05-007-15	Clinker Piles		0.0	0.0	0.0	0.0	Tons Cement Produced	
3-05-007-16	Clinker Transfer		0.0	0.0	0.0	0.0	Tons Cement Produced	
3-05-007-17	Clinker Grinding	32.0	0.0	0.0	0.0	0.0	Tons Cement Produced	
3-05-007-18	Cement Silo		0.0	0.0	0.0	0.0	Tons Cement Produced	
3-05-007-19	Cement Loadout	*0.24^d	0.0	0.0	0.0	0.0	Tons Cement Produced	
Ceramic Clay Manufacturing - 3261								
3-05-008-01	Drying	70.0	*2.4	*1.6	*0.004		Tons Input to Process	211, 220
3-05-008-02	Grinding	76.0	*7.4	*2.3	*0.0		Tons Input to Process	122, 141, 160
3-05-008-03	Storage	34.0		*0.0	*0.0		Tons Input to Process	160
3-05-008-99	Other Not Classified (Specify in Comments)						Tons Produced	
Clay and Fly Ash Sintering (Low Density Aggregate Manufacture) - 3295								
3-05-009-01	Fly Ash Sintering	110.0			*1.4		Tons Finished Product	81
3-05-009-02	Clay/Coke Sintering	40.0			*1.4		Tons Finished Product	81
3-05-009-03	Natural Clay/Shale Sintering	12.0			*1.4		Tons Finished Product	81
3-05-009-04	Raw Clay/Shale Crushing/Screening	*0.5^d	0.0	0.0	0.0	0.0	Tons Raw Material	
3-05-009-05	Raw Clay/Shale Transfer/Conveying	*0.8^d	0.0	0.0	0.0	0.0	Tons Raw Material	
3-05-009-06	Raw Clay/Shale Storage Piles		0.0	0.0	0.0	0.0	Tons Raw Material	
3-05-009-07	Sintered Clay/Coke Product Crushing and Screening	15.0	0.0	0.0	0.0	0.0	Tons Finished Product	

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Clay and Fly Ash Sintering (Low Density Aggregate Manufacture) - 3295 (Continued)								
3-05-009-08	- Sintered Clay/Shale Product Crushing and Screening	12.0	0.0	0.0	0.0	0.0	Tons Finished Product	
3-05-009-09	- Expanded Shale Clinker Cooling		0.0	0.0	0.0	0.0	Tons Finished Product	
3-05-009-10	- Expanded Shale Storage		0.0	0.0	0.0	0.0	Tons Finished Product	
3-05-009-99	- Other Not Classified (Specify in Comments)						Tons Finished Product	
Coal Cleaning - 1111, 1211[ee]								
Thermal Dryer - 1111, 1211[ee]								
3-05-010-01	- Fluidized Bed	20.0	0.43	0.17	0.1		Tons Coal Dried	
3-05-010-02	- Flash or Suspension	16.0	*0.42		*0.1		Tons Coal Dried	133, 225
3-05-010-03	- Multilouvered	25.0			*0.1		Tons Coal Dried	225
3-05-010-04	- Rotary				*0.1		Tons Coal Dried	225
3-05-010-05	- Cascade				*0.1		Tons Coal Dried	225
3-05-010-06	- Continuous Carrier				*0.1		Tons Coal Dried	225
3-05-010-07	- Screen				*0.1		Tons Coal Dried	225
Material Handling - 1111, 1211[ee]								
3-05-010-08	- Unloading	*0.02[d]	0.0	0.0	0.0	0.0	Tons Shipped	
3-05-010-09	- Raw Coal Storage		0.0	0.0	0.0	0.0	Tons Shipped	
3-05-010-10	- Crushing	*0.02[d]	0.0	0.0	0.0	0.0	Tons Shipped	
3-05-010-11	- Coal Transfer	*0.2[d]	0.0	0.0	0.0	0.0	Tons Shipped	
3-05-010-12	- Screening	*0.16[d]	0.0	0.0	0.0	0.0	Tons Shipped	
3-05-010-13	- Air Tables		0.0	0.0	0.0	0.0	Tons Shipped	
3-05-010-14	- Cleaned Coal Storage		0.0	0.0	0.0	0.0	Tons Shipped	
3-05-010-15	- Loading	*0.1[d]	0.0	0.0	0.0	0.0	Tons Shipped	
3-05-010-16	- Loading: Clean Coal		0.0	0.0	0.0	0.0	Tons Shipped	
3-05-010-17	- Secondary Crushing		0.0	0.0	0.0	0.0	Tons Shipped	
Surface Mining Operations - 1111, 1211[ee]								
3-05-010-21	- Overburden Removal	0.45	0.0	0.0	0.0	0.0	Tons Coal Mined	
3-05-010-22	- Drilling/Blasting	0.0001	0.0	0.0	0.0	0.0	Tons Coal Mined	
3-05-010-23	- Loading	0.1	0.0	0.0	0.0	0.0	Tons Coal Mined	
3-05-010-24	- Hauling	17.2	0.0	0.0	0.0	0.0	Vehicle-Miles Traveled	
3-05-010-30	- Topsoil Removal	0.05	0.0	0.0	0.0	0.0	Tons of Topsoil Removed	
3-05-010-31	- Scrapers: Travel Mode	14.6	0.0	0.0	0.0	0.0	Vehicle-Miles by Scrapers	
3-05-010-32	- Topsoil Unloading	0.04	0.0	0.0	0.0	0.0	Tons of Topsoil	
3-05-010-33	- Overburden: Drilling	1.3	0.0	0.0	0.0	0.0	Holes Drilled	
3-05-010-34	- Coal Seam: Drilling	0.22	0.0	0.0	0.0	0.0	Holes Drilled	
3-05-010-35	- Blasting: Coal Overburden	32.7	0.0	0.0	0.0	0.0	Blasts	
3-05-010-36	- Dragline: Overburden Removal	0.05	0.0	0.0	0.0	0.0	Cubic Yards Overburden	
3-05-010-37	- Truck Loading: Overburden	0.03	0.0	0.0	0.0	0.0	Tons Overburden Loaded	

---

[*] Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Surface Mining Operations - 1111, 1211 (Continued)**								
3-05-010-38	Truck Loading: Coal	0.03	0.0	0.0	0.0	0.0	Tons Coal Loaded	
3-05-010-39	Hauling: Haul Trucks	17.2	0.0	0.0	0.0	0.0	Vehicle-Miles by Haul Trucks	
3-05-010-40	Truck Unloading: End Dump-Coal	0.007	0.0	0.0	0.0	0.0	Tons Coal	
3-05-010-41	Truck Unloading: Bottom Dump-Coal	0.066	0.0	0.0	0.0	0.0	Tons Coal	
3-05-010-42	Truck Unloading: Bottom Dump-Overburden	0.002	0.0	0.0	0.0	0.0	Tons Overburden	
3-05-010-43	Open Storage Pile: Coal	47,400.0	0.0	0.0	0.0	0.0	Acres of Coal Storage Area	
3-05-010-44	Train Loading: Coal	0.028	0.0	0.0	0.0	0.0	Tons of Coal Loaded	
3-05-010-45	Bulldozing: Overburden	3.94	0.0	0.0	0.0	0.0	Bulldozer-Hours of Operation	
3-05-010-46	Bulldozing: Coal	49.4	0.0	0.0	0.0	0.0	Bulldozer-Hours of Operation	
3-05-010-47	Grading	5.37	0.0	0.0	0.0	0.0	Vehicle-Miles by Graders	
3-05-010-48	Overburden Replacement	0.012	0.0	0.0	0.0	0.0	Tons Overburden	
3-05-010-49	Wind Erosion: Exposed Areas	760.0	0.0	0.0	0.0	0.0	Acres of Exposed Area	
3-05-010-50	Vehicle Traffic: Light/Medium Vehicles	2.79	0.0	0.0	0.0	0.0	Vehicle-Miles by Light/ Medium Vehicles	
3-05-010-90	Haul Roads: General		0.0	0.0	0.0	0.0	Tons Coal	
3-05-010-99	Other Not Classified (Specify in Comments)						Tons Shipped	
Concrete Batching - 3271, 3272, 3273, 3275, 1771, 3292								
3-05-011-01	General (Non-fugitive)	0.2	*0.0	*0.0	*0.0		Cubic Yards Concrete Produced	170
3-05-011-12	Mixing: Wet		*0.0	*0.0	*0.0		Cubic Yards Concrete Produced	278
3-05-011-13	Mixing: Dry		*0.0	*0.0	*0.0		Cubic Yards Concrete Produced	278
3-05-011-14	Transferring: Conveyors/Elevators		*0.0	*0.0	*0.0		Cubic Yards Concrete Produced	278
3-05-011-15	Storage: Bins/Hoppers		*0.0	*0.0	*0.0		Cubic Yards Concrete Produced	278
Concrete Batching - Fugitive Emissions - 3271, 3272, 3273, 3275, 1771, 3292								
3-05-011-06	Transfer of Sand and Aggregate to Elevated Bins	0.04	0.0	0.0	0.0	0.0	Tons Produced	
3-05-011-07	Cement Unloading to Storage Bins	0.24	0.0	0.0	0.0	0.0	Tons Produced	
3-05-011-08	Weight Hopper Loading of Cement, Sand and Aggregate	0.02	0.0	0.0	0.0	0.0	Tons Produced	
3-05-011-09	Mixer Loading of Cement, Sand and Aggregate	0.04	0.0	0.0	0.0	0.0	Tons Produced	

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Concrete Batching - Fugitive Emissions - 3271, 3272, 3273, 3275, 1771, 3292 (Continued)								
3-05-011-10	- Loading of Transit Mix Truck	0.02	0.0	0.0	0.0	0.0	Tons Produced	
3-05-011-11	- Loading of Dry-Batch Truck	0.04	0.0	0.0	0.0	0.0	Tons Produced	
3-05-011-20	- Asbestos/Cement Products	0.2	0.0	0.0	0.0	0.0	Tons Produced	
3-05-011-99	- Other Not Classified (Specify in Comments)						Tons Produced	
Fiberglass Manufacturing - 3229, 3296								
Wool-Type Glass Fiber - 3296								
3-05-012-01	- Regenerative Furnace	22.0	10.0	5.0	*0.2	0.25	Tons Material Processed	162
3-05-012-02	- Recuperative Furnace	27.5	10.0	1.7	*0.2	0.25	Tons Material Processed	162
3-05-012-03	- Electric Furnace	0.5	0.04	0.27	*0.2	0.05	Tons Material Processed	162
3-05-012-04	- Forming (Rotary Spun)	58.0		*0.49	7.0		Tons Material Processed	131
3-05-012-05	- Curing Oven (Rotary Spun)	9.0		1.1	3.0	1.7	Tons Material Processed	
3-05-012-06	- Cooling	1.3		0.3	0.04		Tons Material Processed	
3-05-012-07	- Unit Melter Furnace	9.0	0.6	0.3	*0.0	0.25	Tons Material Processed	162
3-05-012-08	- Forming (Flame Attenuation)	2.0			0.3		Tons Material Processed	
3-05-012-09	- Curing (Flame Attenuation)	6.0		2.0	7.0	3.5	Tons Material Processed	
Textile-Type Glass Fiber - 3229								
3-05-012-11	- Regenerative Furnace	16.0	30.0	20.0	*0.2	1.0	Tons Material Processed	162
3-05-012-12	- Recuperative Furnace	2.0	3.0	20.0	*0.2	0.5	Tons Material Processed	162
3-05-012-13	- Unit Melter Furnace	6.0		20.0	0.0	0.9	Tons Material Processed	
3-05-012-14	- Forming Process	1.0			0.0		Tons Material Processed	
3-05-012-15	- Curing Oven	1.2		2.6	0.0	1.5	Tons Material Processed	
3-05-012-21	- Raw Material Unloading/Conveying	3.0	0.0	0.0	0.0	0.0	Tons Raw Material Processed	
3-05-012-22	- Raw Material Storage Bins	0.2	0.0	0.0	0.0	0.0	Tons Raw Material Processed	
3-05-012-23	- Raw Material Mixing/Weighing	0.6	0.0	0.0	0.0	0.0	Tons Raw Material Processed	
3-05-012-24	- Raw Material Crushing/Charging		0.0	0.0	0.0	0.0	Tons Raw Material Processed	
3-05-012-99	- Other Not Classified (Specify in Comments)						Tons Material Processed	
Frit Manufacture - 2899								
3-05-013-01	- Rotary Furnace	16.0			*2.4		Tons Charged	247
3-05-013-99	- Other Not Classified (Specify in Comments)						Tons Charged	
Glass Manufacture - 3211, 3221, 3229								
3-05-014-02	- Container Glass: Melting Furnace	1.4	3.4	6.2	0.2	0.2	Tons of Glass Produced	
3-05-014-03	- Flat Glass: Melting Furnace	2.0	3.0	8.0	0.1	0.1	Tons of Glass Produced	299

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Glass Manufacture - 3211, 3221, 3229 (Continued)								
3-05-014-04	Pressed and Blown Glass: Melting Furnace	17.4	5.6	8.5	0.3	0.2	Tons of Glass Produced	299
3-05-014-06	Container Glass: Forming and Finishing	NEG	NEG	NEG	8.7	NEG	Tons of Glass Produced	298-300, 302
3-05-014-07	Flat Glass: Forming and Finishing	NEG	NEG	NEG	NEG	NEG	Tons of Glass Produced	298-302
3-05-014-08	Pressed and Blown Glass: Forming and Finishing	NEG	NEG	NEG	9.0	NEG	Tons of Glass Produced	298-300, 302
3-05-014-10	Raw Material Handling (All Types of Glass)	NEG	0.0	0.0	0.0	0.0	Tons of Glass Produced	298
3-05-014-13	Cullet Crushing/Grinding		0.0	0.0	0.0	0.0	Tons Cullet Processed	
3-05-014-14	Ground Cullet Beading Furnace		*5.6	*8.5	*0.3		Tons Beaded Glass	341
3-05-014-15	Glass Etching with Hydrofluoric Acid Solution		*NEG	*NEG	*NEG		Gallons Etching Solution Consumed	308
Gypsum Manufacture - 3275								
3-05-015-01	Rotary Ore Dryer	*40.0^{ff}	*0.002	*1.6	*0.004		Tons Product	220
3-05-015-02	Primary Grinder/Roller Mills	*2.6^{ff}	*0.0	*0.0	*0.0		Tons Product	191
3-05-015-04	Conveying	*0.7^{ff}	0.0	0.0	0.0	0.0	Tons Throughput	
3-05-015-05	Primary Crushing: Gypsum Ore	*0.5^{c}	0.0	0.0	0.0	0.0	Tons Crude Gypsum Processed	
3-05-015-06	Secondary Crushing: Gypsum Ore	*1.5^{c}	0.0	0.0	0.0	0.0	Tons Crude Gypsum Processed	
3-05-015-07	Screening: Gypsum Ore		0.0	0.0	0.0	0.0	Tons Crude Gypsum Processed	
3-05-015-08	Stockpile: Gypsum Ore		0.0	0.0	0.0	0.0	Tons Crude Gypsum Processed	
3-05-015-09	Storage Bins: Gypsum Ore		0.0	0.0	0.0	0.0	Tons Crude Gypsum Processed	
3-05-015-10	Storage Bins: Landplaster		0.0	0.0	0.0	0.0	Tons Product	
3-05-015-11	Continuous Kettle: Calciner	41.0	*46.2	*2.8	*0.02		Tons Product	177, 223, 267
3-05-015-12	Flash Calciner	37.0	*8.2	*2.8	*0.02		Tons Product	223, 270
3-05-015-13	Impact Mill	100.0			*0.02		Tons Product	223
3-05-015-14	Storage Bins: Stucco		0.0	0.0	0.0	0.0	Tons Product	
3-05-015-15	Tube/Ball Mills		0.0	0.0	0.0	0.0	Tons Product	
3-05-015-16	Mixers		0.0	0.0	0.0	0.0	Tons Product	
3-05-015-17	Bagging		0.0	0.0	0.0	0.0	Tons Product	
3-05-015-18	Mixers/Conveyor		0.0	0.0	0.0	0.0	Tons Product	
3-05-015-19	Forming Line		0.0	0.0	0.0	0.0	Tons Product	
3-05-015-20	Drying Kiln				*0.02		Tons Product	107
3-05-015-21	End Sawing (8 ft)	8.0	0.0	0.0	0.0	0.0	10^3 Sq. Ft. Board Sawed	
3-05-015-22	End Sawing (12 ft)	5.0	0.0	0.0	0.0	0.0	10^3 Sq. Ft. Board Sawed	
Lime Manufacture - 3274								
3-05-016-01	Primary Crushing	*0.5^{c}	0.0	0.0	0.0	0.0	Tons Limestone Processed	
3-05-016-02	Secondary Crushing/Screening	*1.5^{c}	0.0	0.0	0.0	0.0	Tons Limestone Processed	

[a] Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Lime Manufacture - 3274 (Continued)								
3-05-016-03	Calcining-Vertical Kiln^{dd}	8	*8.2	*2.8	*0.02		Tons Lime Produced	223, 270
3-05-016-04	Calcining-Rotary Kiln^{dd}	350	*5.1	2.8	*0.06	*2	Tons Lime Produced	132, 226, 298, 300
3-05-016-05	Calcimatic Kiln^{dd}	50		0.2	*0.02		Tons Lime Produced	226
3-05-016-06	Fluidized Bed Kiln^{dd}				*0.02		Tons Lime Produced	226
3-05-016-07	Raw Material Transfer and Conveying	*0.8^{d}	0.0	0.0	0.0	0.0	Tons Limestone Processed	
3-05-016-08	Raw Material Unloading	*0.2^{d}	0.0	0.0	0.0	0.0	Tons Limestone Processed	
3-05-016-09	Hydrator (Atmospheric)	0.1	0.0	0.0	*NEG	0.0	Tons Hydrated Lime	285
3-05-016-10	Raw Material Storage Piles	*4.0^{d}	0.0	0.0	0.0	0.0	Tons Limestone Processed	
3-05-016-11	Product Cooler	40.0	NEG	NEG	0.0	NEG	Tons Lime Produced	298, 299, 300, 302
3-05-016-12	Pressure Hydrator	0.1	NEG	NEG	0.0	NEG	Tons Hydrated Lime Produced	298, 299, 300, 302
3-05-016-13	Lime Silos		0.0	0.0	0.0	0.0	Tons Lime Produced	
3-05-016-14	Packing/Shipping	*0.25^{d}	0.0	0.0	0.0	0.0	Tons Lime Produced	
3-05-016-15	Product Transfer and Conveying		0.0	0.0	0.0	0.0	Tons Lime Produced	
3-05-016-16	Primary Screening		0.0	0.0	0.0	0.0	Tons Limestone Processed	
3-05-016-17	Multiple Hearth Calciner		*8.2	*2.8	*0.02		Tons Lime Produced	226, 270
Mineral Wool - 3296								
3-05-017-01	Cupola	22.0	0.02	*1.6	*NEG		Tons Charged	158
3-05-017-02	Reverberatory Furnace	5.0	0.0	*NEG	*NEG		Tons Charged	158
3-05-017-03	Blow Chamber	17.0	0.0	*NEG	*0.9		Tons Charged	158
3-05-017-04	Curing Oven	4.0	0.0	*0.16	*1.0		Tons Charged	158
3-05-017-05	Cooler	2.0	0.0	*NEG	*0.04		Tons Charged	158
3-05-017-99	Other Not Classified (Specify in Comments)						Tons Processed	
Perlite Manufacture - 3295								
3-05-018-01	Vertical Furnace	21.0	*NEG	*NEG	*NEG		Tons Charged	159
3-05-018-99	Other Not Classified (Specify in Comments)						Tons Processed	
Phosphate Rock - 1475								
3-05-019-01	Drying	5.7	*0.002	*1.6	*0.004		Tons Phosphate Rock	220
3-05-019-02	Grinding	1.5	0.0	0.0	0.0	0.0	Tons Phosphate Rock	
3-05-019-03	Transfer/Storage	2.0	0.0	0.0	0.0	0.0	Tons Phosphate Rock	
3-05-019-04	Open Storage	40.0	0.0	0.0	0.0	0.0	Tons Phosphate Rock	
3-05-019-05	Calcining	15.4	0.0	0.0	0.0	0.0	Tons Phosphate Rock	
3-05-019-99	Other Not Classified (Specify in Comments)						Tons Processed	
Stone Quarrying/Processing - 1411, 1422, 1423, 1429, 1499								
3-05-020-01	Primary Crushing	0.5^{gg}	0.0	0.0	0.0	0.0	Tons Raw Material	
3-05-020-02	Secondary Crush/Screen	1.5^{gg}	0.0	0.0	0.0	0.0	Tons Raw Material	

---

[*] Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Stone Quarrying/Processing - 1411, 1422, 1423, 1429, 1499 (Continued)								
3-05-020-03	Tertiary Crush/Screen	6.0^{gg}	0.0	0.0	0.0	0.0	Tons Raw Material	
3-05-020-04	Recrush/Screening	5.0^{gg}	0.0	0.0	0.0	0.0	Tons Processed	
3-05-020-05	Fines Mill	6.0^{gg}	0.0	0.0	0.0	0.0	Tons Processed	
3-05-020-06	Miscellaneous Operation Screen/ Convey/Handling	2.0	0.0	0.0	0.0	0.0	Tons Raw Material	
3-05-020-07	Open Storage	$*0.33^{cc}$	0.0	0.0	0.0	0.0	Tons Product Stored	
3-05-020-08	Cut Stone - General		0.0	0.0	0.0	0.0	Tons Processed	
3-05-020-09	Blasting - General	$*0.16^{d}$	0.0	0.0	0.0	0.0	Tons Raw Material	
3-05-020-10	Drilling		0.0	0.0	0.0	0.0	Tons Raw Material	
3-05-020-11	Hauling	52.0	0.0	0.0	0.0	0.0	Vehicle-Miles	
3-05-020-12	Drying	$*35.0^{d}$	0.0	0.0	0.0	0.0	Tons Stone Dried	
3-05-020-13	Bar Grizzlies		0.0	0.0	0.0	0.0	Tons Processed	
3-05-020-14	Shaker Screens		0.0	0.0	0.0	0.0	Tons Processed	
3-05-020-15	Vibrating Screens		0.0	0.0	0.0	0.0	Tons Processed	
3-05-020-16	Revolving Screens		0.0	0.0	0.0	0.0	Tons Processed	
3-05-020-20	Drilling		0.0	0.0	0.0	0.0	Feet Drilled	
Salt Mining - 1476								
3-05-021-01	General		0.0	0.0	0.0	0.0	Tons Mined	
3-05-021-02	Granulation: Stack Dryer		*0.002	*1.6	*0.004		Tons Salt Granulated	220
3-05-021-03	Filtration: Vacuum Filter				*NEG		Tons Salt Produced	285
3-05-021-04	Crushing		*0.0	*0.0	*0.0		Tons Salt Handled	192
3-05-021-05	Screening		*0.0	*0.0	*0.0		Tons Salt Handled	192
3-05-021-06	Conveying		*0.0	*0.0	*0.0		Tons Salt Handled	192
Potash Production - 1474								
3-05-022-01	Mine - Grind/Dry		0.0	0.0	0.0	0.0	Tons Ore	
3-05-022-99	Other Not Classified (Specify in Comments)						Tons Processed	
Magnesium Carbonate - 1459								
3-05-024-01	Mine/Process		0.0	0.0	0.0	0.0	Tons Product	
3-05-024-99	Other Not Classified (Specify in Comments)						Tons Processed	
Sand/Gravel - 1442, 1446								
3-05-025-02	Aggregate Storage	$*0.33^{cc}$	0.0	0.0	0.0	0.0	Tons Product	
3-05-025-03	Material Transfer and Conveying	0.029	0.0	0.0	0.0	0.0	Tons Product	
3-05-025-04	Hauling	52.0	0.0	0.0	0.0	0.0	Vehicle-Miles	
3-05-025-05	Pile Forming: Stacker	0.13	0.0	0.0	0.0	0.0	Tons Product	
3-05-025-06	Bulk Loading	0.24	0.0	0.0	0.0	0.0	Tons Product	
3-05-025-07	Storage Piles	3,796.0	0.0	0.0	0.0	0.0	Acres of Storage Area	
3-05-025-08	Dryer		*0.002	*1.6	*0.004		Tons Product Produced	220
3-05-025-09	Cooler		*NEG	*NEG	*0.0		Tons Product Produced	304

---

[*] Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Sand/Gravel - 1442, 1446 (Continued)								
3-05-025-10	Crushing		*0.0	*0.0	*0.0		Tons Product Produced	192
3-05-025-11	Screening		*0.0	*0.0	*0.0		Tons Product Produced	192
Diatomaceous Earth - 1499, 3295								
3-05-026-01	Handling		0.0	0.0	0.0	0.0	Tons Product	
3-05-026-99	Other Not Classified (Specify in Comments)						Tons Processed	
Ceramic Electric Parts - 3264								
3-05-030-99	Other Not Classified (Specify in Comments)						Tons Processed	
Asbestos Mining - 1499								
3-05-031-01	Surface Blasting		0.0	0.0	0.0	0.0	Tons of Ore	
3-05-031-02	Surface Drilling		0.0	0.0	0.0	0.0	Tons of Ore	
3-05-031-03	Cobbing		0.0	0.0	0.0	0.0	Tons of Ore	
3-05-031-04	Loading		0.0	0.0	0.0	0.0	Tons of Ore	
3-05-031-05	Convey/Haul Asbestos		0.0	0.0	0.0	0.0	Tons of Ore	
3-05-031-06	Convey/Haul Waste		0.0	0.0	0.0	0.0	Tons of Ore	
3-05-031-07	Unloading		0.0	0.0	0.0	0.0	Tons of Ore	
3-05-031-08	Overburden Stripping		0.0	0.0	0.0	0.0	Tons Removed	
3-05-031-09	Ventilation of Process Operations		0.0	0.0	0.0	0.0	Tons of Ore	
3-05-031-10	Stockpiling		0.0	0.0	0.0	0.0	Tons of Ore	
3-05-031-11	Tailing Piles		0.0	0.0	0.0	0.0	Tons of Material	
3-05-031-99	Other Not Classified (Specify in Comments)						Tons Processed	
Asbestos Milling - 1499								
3-05-032-01	Crushing		0.0	0.0	0.0	0.0	Tons Processed	
3-05-032-02	Drying		0.0	0.0	0.0	0.0	Tons Processed	
3-05-032-03	Recrushing		0.0	0.0	0.0	0.0	Tons Processed	
3-05-032-04	Screening		0.0	0.0	0.0	0.0	Tons Processed	
3-05-032-05	Fiberizing		0.0	0.0	0.0	0.0	Tons Processed	
3-05-032-06	Bagging		0.0	0.0	0.0	0.0	Tons Processed	
3-05-032-99	Other Not Classified (Specify in Comments)						Tons Processed	
Vermiculite - 1499								
3-05-033-01	General		*0.47	*0.08	*NEG		Tons Product	213
Mining and Quarrying of Nonmetallic Minerals, Except Fuels - Specify Material - 1400-1499								
3-05-040-01	Open Pit Blasting		0.0	0.0	0.0	0.0	Hundreds of Tons Material	
3-05-040-02	Open Pit Drilling		0.0	0.0	0.0	0.0	Hundreds of Tons Material	
3-05-040-03	Open Pit Cobbing		0.0	0.0	0.0	0.0	Hundreds of Tons Material	

---

[*] Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO$_x$ Lbs/Unit	NO$_x$ Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Mining and Quarrying of Nonmetallic Minerals, Except Fuels - Specify Material - 1400-1499 (Continued)								
3-05-040-10	- Underground Ventilation		0.0	0.0	0.0	0.0	Hundreds of Tons Material	
3-05-040-20	- Loading		0.0	0.0	0.0	0.0	Hundreds of Tons Material	
3-05-040-21	- Convey/Haul Material		0.0	0.0	0.0	0.0	Hundreds of Tons Material	
3-05-040-22	- Convey/Haul Waste		0.0	0.0	0.0	0.0	Hundreds of Tons Material	
3-05-040-23	- Unloading		0.0	0.0	0.0	0.0	Hundreds of Tons Material	
3-05-040-24	- Stripping		0.0	0.0	0.0	0.0	Hundreds of Tons Material	
3-05-040-25	- Stockpile		0.0	0.0	0.0	0.0	Hundreds of Tons Material	
3-05-040-30	- Primary Crusher		0.0	0.0	0.0	0.0	Hundreds of Tons Material	
3-05-040-31	- Secondary Crusher		0.0	0.0	0.0	0.0	Hundreds of Tons Material	
3-05-040-32	- Ore Concentrator		0.0	0.0	0.0	0.0	Hundreds of Tons Material	
3-05-040-33	- Ore Dryer		0.0	0.0	0.0	0.0	Hundreds of Tons Material	
3-05-040-34	- Screening		0.0	0.0	0.0	0.0	Hundreds of Tons Material	
3-05-040-36	- Tailing Piles		0.0	0.0	0.0	0.0	Hundreds of Tons Material	
3-05-040-99	- Other Not Classified (Specify in Comments)						Hundreds of Tons Material	
Bulk Materials Elevators (Specify Material Handled in Comments) - 4463								
3-05-100-01	- Unloading		0.0	0.0	0.0	0.0	Tons Processed	
3-05-100-02	- Loading		0.0	0.0	0.0	0.0	Tons Processed	
3-05-100-03	- Removal from Bins		0.0	0.0	0.0	0.0	Tons Processed	
3-05-100-04	- Drying		0.0	0.0	0.0	0.0	Tons Processed	
3-05-100-05	- Cleaning		0.0	0.0	0.0	0.0	Tons Processed	
3-05-100-06	- Elevator Legs (Headhouse)		0.0	0.0	0.0	0.0	Tons Processed	
3-05-100-07	- Tripper (Gallery Belt)		0.0	0.0	0.0	0.0	Tons Processed	
Bulk Materials Conveyors - 4463								
3-05-101-01	- Ammonium Sulfate		0.0	0.0	0.0	0.0	Tons Processed	
3-05-101-02	- Cement		0.0	0.0	0.0	0.0	Tons Processed	
3-05-101-03	- Coal		0.0	0.0	0.0	0.0	Tons Processed	
3-05-101-04	- Coke		0.0	0.0	0.0	0.0	Tons Processed	
3-05-101-05	- Limestone		0.0	0.0	0.0	0.0	Tons Processed	
3-05-101-06	- Phosphate Rock		0.0	0.0	0.0	0.0	Tons Processed	
3-05-101-07	- Scrap Metal		0.0	0.0	0.0	0.0	Tons Processed	
3-05-101-08	- Sulfur		0.0	0.0	0.0	0.0	Tons Processed	
3-05-101-96	- Chemical: Specify in Comments		0.0	0.0	0.0	0.0	Tons Processed	
3-05-101-97	- Fertilizer: Specify in Comments		0.0	0.0	0.0	0.0	Tons Processed	
3-05-101-98	- Mineral: Specify in Comments		0.0	0.0	0.0	0.0	Tons Processed	
3-05-101-99	- Other Not Classified (Specify in Comments)						Tons Processed	
Storage Bins - 4463								
3-05-102-01	- Ammonium Sulfate		0.0	0.0	0.0	0.0	Tons Processed	
3-05-102-02	- Cement		0.0	0.0	0.0	0.0	Tons Processed	
3-05-102-03	- Coal		0.0	0.0	0.0	0.0	Tons Processed	

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Storage Bins - 4463 (Continued)								
3-05-102-04	Coke		0.0	0.0	0.0	0.0	Tons Processed	
3-05-102-05	Limestone		0.0	0.0	0.0	0.0	Tons Processed	
3-05-102-06	Phosphate Rock		0.0	0.0	0.0	0.0	Tons Processed	
3-05-102-07	Scrap Metal		0.0	0.0	0.0	0.0	Tons Processed	
3-05-102-08	Sulfur		0.0	0.0	0.0	0.0	Tons Processed	
3-05-102-96	Chemical: Specify in Comments		0.0	0.0	0.0	0.0	Tons Processed	
3-05-102-97	Fertilizer: Specify in Comments		0.0	0.0	0.0	0.0	Tons Processed	
3-05-102-98	Mineral: Specify in Comments		0.0	0.0	0.0	0.0	Tons Processed	
3-05-102-99	Other Not Classified (Specify in Comments)						Tons Processed	
Open Stockpiles - 4463								
3-05-103-01	Ammonium Sulfate		0.0	0.0	0.0	0.0	Tons Processed	
3-05-103-02	Cement		0.0	0.0	0.0	0.0	Tons Processed	
3-05-103-03	Coal		0.0	0.0	0.0	0.0	Tons Processed	
3-05-103-04	Coke		0.0	0.0	0.0	0.0	Tons Processed	
3-05-103-05	Limestone		0.0	0.0	0.0	0.0	Tons Processed	
3-05-103-06	Phosphate Rock		0.0	0.0	0.0	0.0	Tons Processed	
3-05-103-07	Scrap Metal		0.0	0.0	0.0	0.0	Tons Processed	
3-05-103-08	Sulfur		0.0	0.0	0.0	0.0	Tons Processed	
3-05-103-96	Chemical: Specify in Comments		0.0	0.0	0.0	0.0	Tons Processed	
3-05-103-97	Fertilizer: Specify in Comments		0.0	0.0	0.0	0.0	Tons Processed	
3-05-103-98	Mineral: Specify in Comments		0.0	0.0	0.0	0.0	Tons Processed	
3-05-103-99	Other Not Classified (Specify in Comments)						Tons Processed	
Unloading Operation - 4463								
3-05-104-01	Ammonium Sulfate		0.0	0.0	0.0	0.0	Tons Processed	
3-05-104-02	Cement		0.0	0.0	0.0	0.0	Tons Processed	
3-05-104-03	Coal		0.0	0.0	0.0	0.0	Tons Processed	
3-05-104-04	Coke		0.0	0.0	0.0	0.0	Tons Processed	
3-05-104-05	Limestone		0.0	0.0	0.0	0.0	Tons Processed	
3-05-104-06	Phosphate Rock		0.0	0.0	0.0	0.0	Tons Processed	
3-05-104-07	Scrap Metal		0.0	0.0	0.0	0.0	Tons Processed	
3-05-104-08	Sulfur		0.0	0.0	0.0	0.0	Tons Processed	
3-05-104-96	Chemical: Specify in Comments		0.0	0.0	0.0	0.0	Tons Processed	
3-05-104-97	Fertilizer: Specify in Comments		0.0	0.0	0.0	0.0	Tons Processed	
3-05-104-98	Mineral: Specify in Comments		0.0	0.0	0.0	0.0	Tons Processed	
3-05-104-99	Other Not Classified (Specify in Comments)						Tons Processed	
Loading Operation - 4463								
3-05-105-01	Ammonium Sulfate		0.0	0.0	0.0	0.0	Tons Processed	
3-05-105-02	Cement		0.0	0.0	0.0	0.0	Tons Processed	

SCC	Process	PART Lbs/Unit	SO$_x$ Lbs/Unit	NO$_x$ Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Loading Operation - 4463 (Continued)								
3-05-105-03	Coal		0.0	0.0	0.0	0.0	Tons Processed	
3-05-105-04	Coke		0.0	0.0	0.0	0.0	Tons Processed	
3-05-105-05	Limestone		0.0	0.0	0.0	0.0	Tons Processed	
3-05-105-06	Phosphate Rock		0.0	0.0	0.0	0.0	Tons Processed	
3-05-105-07	Scrap Metal		0.0	0.0	0.0	0.0	Tons Processed	
3-05-105-08	Sulfur		0.0	0.0	0.0	0.0	Tons Processed	
3-05-105-96	Chemical: Specify in Comments		0.0	0.0	0.0	0.0	Tons Processed	
3-05-105-97	Fertilizer: Specify in Comments		0.0	0.0	0.0	0.0	Tons Processed	
3-05-105-98	Mineral: Specify in Comments		0.0	0.0	0.0	0.0	Tons Processed	
3-05-105-99	Other Not Classified (Specify in Comments)						Tons Processed	
Calcining - 4463								
3-05-150-01	Raw Material Handling				*0.0		Tons Throughput	90
3-05-150-02	General				*0.0		Tons Throughput	90
3-05-150-03	Grinding/Milling				*0.0		Tons Throughput	90
3-05-150-04	Finished Product Handling				*0.0		Tons Throughput	90
3-05-150-05	Mixing				*0.0		Tons Throughput	90
Mineral Products - Fugitive Emissions[f]								
3-05-888-01	Specify in Comments Field						Tons Product	
3-05-888-02	Specify in Comments Field						Tons Product	
3-05-888-03	Specify in Comments Field						Tons Product	
3-05-888-04	Specify in Comments Field						Tons Product	
3-05-888-05	Specify in Comments Field						Tons Product	
Mineral Products - Fuel Fired Equipment								
Process Heaters								
3-05-900-01	Distillate Oil (No. 2)		*144.0 S	*20.0	*0.20		10^3 Gallons Burned	129
3-05-900-02	Residual Oil		*159.0 S	*55.0	*0.28		10^3 Gallons Burned	129
3-05-900-03	Natural Gas		*0.6	*140.0	*2.8		10^6 Cubic Feet Burned	129
Incinerators								
3-05-900-11	Distillate Oil (No. 2)				*0.4		10^3 Gallons Burned	130
3-05-900-12	Residual Oil				*0.56		10^3 Gallons Burned	130
3-05-900-13	Natural Gas				*5.6		10^6 Cubic Feet Burned	130
Flares								
3-05-900-23	Natural Gas				*5.6		10^6 Cubic Feet Burned	130
Mineral Products: Other Not Classified								
3-05-999-99	Specify in Comments						Tons Product	

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
PETROLEUM INDUSTRY - MAJOR GROUP 29[hh]								
Process Heaters - 2911								
3-06-001-03	Oil Fired	*12.0 S^b	159.0 S	55.0	0.3	5.0	10^3 Gallons Oil Burned	
3-06-001-04	Gas Fired	3.0	*950.0 S^c	140.0	2.8	35.0	10^6 Cubic Feet Burned	
3-06-001-05	Natural Gas-Fired	3.0	0.6	140.0	2.8	35.0	10^6 Cubic Feet Burned	
3-06-001-06	Process Gas-Fired	3.0	*950.0 S^c	140.0	2.8	35.0	10^6 Cubic Feet Burned	
3-06-001-07	LPG Fired	0.27	*86.5 S^c	12.8	0.26	3.2	10^3 Gallons Burned	
3-06-001-08	Landfill Gas-Fired				*2.8		10^6 Cubic Feet Burned	129
3-06-001-99	Other Not Classified						Gallons Heated	
Fluid Catalytic Cracking Units (FCC) - 2911								
3-06-002-01	Fluid Catalytic Cracking Unit	242.0	493.0	71.0	140.8[11]	13,700.0[11]	10^3 BBLs. Fresh Feed	
3-06-002-02	Catalyst Handling System				*NEG		10^3 BBLs. Fresh Feed	285
3-06-003-01	Thermal Catalytic Cracking Unit	17.0	60.0	5.0	55.7[11]	3,800.0[11]	10^3 BBLs. Fresh Feed	
Blowdown Systems - 2911								
3-06-004-01	Blowdown System with Vapor Recovery System with Flaring	0.0	26.9	18.9	0.8	4.3	10^3 BBLs. Refinery Feed	
3-06-004-02	Blowdown System without Controls	0.0	0.0	0.0	580.0	0.0	10^3 BBLs. Refinery Feed	
Fugitive Hydrocarbon Emissions from Petroleum Refining - 2911								
3-06-005-03	Process Drains and Waste Water Separators	0.0	0.0	0.0	5.0	0.0	10^3 Gallons Waste Water	
3-06-005-04	Process Drains and Waste Water Separators	0.0	0.0	0.0	200.0	0.0	10^3 BBLs. Refinery Feed	
3-06-005-05	Waste Water Treatment Plant Excluding Separator	0.0	0.0	0.0	*0.04	0.0	10^3 Gallons Waste Water	98
3-06-005-06	Waste Water Treatment Plant Excluding Separator	0.0	0.0	0.0	*0.77	0.0	10^3 BBLs. Refinery Feed	99
Vacuum Distillate Column Condensors - 2911								
3-06-006-02	Vacuum Distillation Column Condensor	0.0	0.0	0.0	50.0	0.0	10^3 BBLs. Vacuum Feed	
3-06-006-03	Vacuum Distillation Column Condensor	0.0	0.0	0.0	18.0	0.0	10^3 BBLs. Refinery Feed	
Cooling Towers - 2911								
3-06-007-01	Cooling Towers	0.0	0.0	0.0	6.0	0.0	10^6 Gallons Cooling Water	
3-06-007-02	Cooling Towers	0.0	0.0	0.0	10.0	0.0	10^3 BBLs. Refinery Feed	
Fugitive Hydrocarbon Emissions from Petroleum Refining - 2911								
3-06-008-01	Pipeline Valves and Flanges	0.0	0.0	0.0	16.3	0.0	10^3 BBLs. Refinery Feed	
3-06-008-02	Vessel Relief Valves	0.0	0.0	0.0	2.9	0.0	10^3 BBLs. Refinery Feed	
3-06-008-03	Pump Seals (Without Controls)	0.0	0.0	0.0	4.1	0.0	10^3 BBLs. Refinery Feed	

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Fugitive Hydrocarbon Emissions from Petroleum Refining - 2911 (Continued)								
3-06-008-04	Compressor Seals	0.0	0.0	0.0	3.7	0.0	10^3 BBLs. Refinery Feed	
3-06-008-05	Miscellaneous: Sampling/ Non-Asphalt Blowing, Purging, etc.	0.0	0.0	0.0	10.0	0.0	10^3 BBLs. Refinery Feed	
3-06-008-06	Pump Seals (With Controls)	0.0	0.0	0.0	4.1	0.0	10^3 BBLs. Refinery Feed	
3-06-008-07	Blind Changing	0.0	0.0	0.0	0.3	0.0	10^3 BBLs. Refinery Feed	
Pipeline Valves - 2911[jj]								
3-06-008-11	Gas Streams	0.0	0.0	0.0	516.84	0.0	Valves in Operation	
3-06-008-12	Light Liquid/Gas Stream	0.0	0.0	0.0	210.24	0.0	Valves in Operation	
3-06-008-13	Heavy Liquid Stream	0.0	0.0	0.0	4.38	0.0	Valves in Operation	
3-06-008-14	Hydrogen Streams	0.0	0.0	0.0	157.68	0.0	Valves in Operation	
3-06-008-15	Open-ended Valves (All Streams)	0.0	0.0	0.0	43.8	0.0	Valves in Operation	
3-06-008-16	Flanges (All Streams)	0.0	0.0	0.0	4.9	0.0	Valves in Operation	
3-06-008-17	Pump Seals (Liquid/Gas Stream)	0.0	0.0	0.0	2,190.0	0.0	Seals in Operation	
3-06-008-18	Pump Seals (Heavy Liquid Stream)	0.0	0.0	0.0	402.96	0.0	Seals in Operation	
3-06-008-19	Compressor Seals (Gas Streams)	0.0	0.0	0.0	12,264.0	0.0	Seals in Operation	
3-06-008-20	Compressor Seals (Heavy Liquid Stream)	0.0	0.0	0.0	963.6	0.0	Seals in Operation	
3-06-008-21	Drains (All Streams)	0.0	0.0	0.0	613.2	0.0	Drains in Operation	
3-06-008-22	Vessel Relief Valves (All Streams)	0.0	0.0	0.0	3,153.6	0.0	Valves in Operation	
Flares - 2900-2999								
3-06-009-03	Natural Gas				*5.6		10^6 Cubic Feet Burned	130
3-06-009-04	Process Gas				*5.6		10^6 Cubic Feet Burned	130
Sludge Convertor - 2999								
3-06-010-01	General				*0.2		Tons Processed	143
Asphalt Blowing - 2911								
3-06-011-01	Asphalt Blowing		0.0	0.0	60.0	0.0	Tons of Asphalt	
Fluid Coking Units - 2911								
3-06-012-01	Fluid Coking Units	*523.0[d]	*0.0	*0.0	*16		10^3 BBLs. Fresh Feed	143, 171
Petroleum Coke Calcining - 2911								
3-06-014-01	Coke Calciner		*15	*1.2	*0.8		Tons Raw Coke	138
Bauxite Burning								
3-06-015-99	Other Not Classified (Specify in Comments)						Tons Bauxite Used	
Incinerators - 2900-2999								
3-06-099-11	Distillate Oil (No. 2)				*0.4		10^3 Gallons Burned	130
3-06-099-12	Residual Oil				*0.56		10^3 Gallons Burned	130

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Incinerators - 2900-2999 (Continued)								
3-06-099-13	- Natural Gas				*5.6		10^6 Cubic Feet Burned	130
3-06-099-14	- Process Gas				*5.6		10^6 Cubic Feet Burned	130
Lube Oil Refining - 2922								
3-06-100-01	- General						10^3 BBL. Lube Oil	
Petroleum Industry - Fugitive Emissions[f]								
3-06-888-01	- Specify in Comments Field						10^3 BBL. Refinery Feed	
3-06-888-02	- Specify in Comments Field						10^3 BBL. Refinery Feed	
3-06-888-03	- Specify in Comments Field						10^3 BBL. Refinery Feed	
3-06-888-04	- Specify in Comments Field						10^3 BBL. Refinery Feed	
3-06-888-05	- Specify in Comments Field						10^3 BBL. Refinery Feed	
PULP AND PAPER INDUSTRY - MAJOR GROUPS 24, 25, 26, 27								
Sulfate (Kraft) Pulping - 2611, 2621, 2631 (For Bark Boilers, See Industrial Boilers)								
3-07-001-01	- Digester Relief and Blow Tank	0.0	0.0	*0.0	*0.0	0.0	Air-Dry Tons Unbleached Pulp	172
3-07-001-02	- Washers/Screens	0.0	0.01	*0.0	*0.2	0.0	Air-Dry Tons Unbleached Pulp	207, 257
3-07-001-03	- Multi-Effect Evaporator	0.0	0.01	*0.0	*0.0	0.0	Air-Dry Tons Unbleached Pulp	172
3-07-001-04	- Recovery Furnace/Direct Contact Evaporator	180	7	*1.0[d]	*1.95	11	Air-Dry Tons Unbleached Pulp	154, 298, 299, 302
3-07-001-05	- Smelt Dissolving Tank	7	0.2	*2.9	*0.16	0.0	Air-Dry Tons Unbleached Pulp	207, 209, 298, 299
3-07-001-06	- Lime Kiln	56	0.3	*1.0[d]	*0.25	0.1	Air-Dry Tons Unbleached Pulp	153, 298, 302
3-07-001-07	- Turpentine Condensor	0.0	0.0	0.0	*0.07	0.0	Air-Dry Tons Unbleached Pulp	207
3-07-001-08	- Fluid Bed Calciner	*72.0[d]	*0.3	*1.0	*0.25		Air-Dry Tons Unbleached Pulp	266
3-07-001-09	- Liquor Oxidation Tower		*0.02	*0.0	*0.45		Air-Dry Tons Unbleached Pulp	115, 152, 257
3-07-001-10	- Recovery Furnace/Indirect Contact Evaporator	230	*1.5	*2.0	*0.8	11	Air-Dry Tons Unbleached Pulp	154, 173, 298, 302
3-07-001-99	- Other Not Classified (Specify in Comments)						Air-Dry Tons Unbleached Pulp	
Sulfite Pulping - 2611, 2621, 2631								
3-07-002-03	- Digester/Blow Pit/Dump Tank (All Bases Except Ca)	NEG	40.0	*0.0	*NEG		Air-Dry Tons Unbleached Pulp	257, 298, 320
3-07-002-11	- Digester/Blow Pit/Dump Tank (Ca)	NEG	67.0	*0.0	*NEG		Air-Dry Tons Unbleached Pulp	257, 298, 320

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42

SCC	Process	PART Lbs/Unit	SO$_x$ Lbs/Unit	NO$_x$ Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Sulfite Pulping - 2611, 2621, 2631 (Continued)								
3-07-002-12	Digester/Blow Pit/Dump Tank (MgO with Recovery System)	NEG	0.0	*0.0	*NEG		Air-Dry Tons Unbleached Pulp	257, 298, 320
3-07-002-13	Digester/Blow Pit/Dump Tank^{kk} (MgO with Process Change and Scrubber)	NEG	0.2	*0.0	*NEG		Air-Dry Tons Unbleached Pulp	257, 320
3-07-002-14	Digester/Blow Pit/Dump Tank^{kk} (NH$_3$ with Process Change and Scrubber)	NEG	0.4	*0.0	*NEG		Air-Dry Tons Unbleached Pulp	257, 320
3-07-002-15	Digester/Blow Pit/Dump Tank^{kk} (Na with Process Change and Scrubber)	NEG	2.0	*0.0	*NEG		Air-Dry Tons Unbleached Pulp	257, 320
3-07-002-21	Recovery System (MgO)			*0.0	*3.5		Air-Dry Tons Unbleached Pulp	151, 257
3-07-002-22	Recovery System (NH$_3$)			*0.0	*3.5		Air-Dry Tons Unbleached Pulp	151, 257
3-07-002-23	Recovery System (Na)			*0.0	*3.5		Air-Dry Tons Unbleached Pulp	151, 257
3-07-002-31	Acid Plant (NH$_3$)			*0.0	*0.0		Air-Dry Tons Unbleached Pulp	257, 350
3-07-002-32	Acid Plant (Na)			*0.0	*0.0		Air-Dry Tons Unbleached Pulp	257, 350
3-07-002-33	Acid Plant (Ca)			*0.0	*0.0		Air-Dry Tons Unbleached Pulp	257, 350
3-07-002-34	Other Miscellaneous Sources: Knotters/Washers/Screens, etc.	0.0	12.0	*0.0	*NEG		Air-Dry Tons Unbleached Pulp	257, 320
Neutral Sulfite Semichemical Pulping - 2611, 2621, 2531 (For Bark Boilers, See Industrial Boilers)								
3-07-003-01	Digester/Dump Tank/Blow Pit		*0.2	*0.0	*NEG		Air-Dry Tons Unbleached Pulp	116, 259
3-07-003-02	Evaporator		*0.01	*0.0	*NEG		Air-Dry Tons Unbleached Pulp	259
3-07-003-03	Fluid Bed Reactor			*1.0	*0.25		Air-Dry Tons Unbleached Pulp	79
3-07-003-04	Sulfur Burner/Absorbers		*20.0	*0.0	*NEG		Air-Dry Tons Unbleached Pulp	116, 259
Pulpboard Manufacture - 2631, 2661								
3-07-004-01	Paperboard: General	0.0			*0.2		Tons Finished Product	143
3-07-004-02	Fiberboard: General	0.6			*2.5		Tons Finished Product	28
Wood Pressure Treating - 2491								
3-07-005-01	Creosote				*NEG		Tons Wood Treated	265
3-07-005-97	Other Not Classified (Specify in Comments)						10^3 Cubic Feet	
3-07-005-98	Other Not Classified (Specify in Commencs)						10^3 Board Feet	
3-07-005-99	Other Not Classified (Specify in Comments)						Tons Wood Treated	

---

[*] Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Plywood/Particleboard Operations - 2435, 2436, 2492								
3-07-007-01	General: Not Classified	4.25			1.52		10^4 Sq. Ft. 3/8" Plywood	
3-07-007-02	Sanding Operations		0.0	0.0	0.0	0.0	Tons Processed	
3-07-007-03	Particleboard Drying	0.6	0.0	0.0	0.0	0.0	Tons Processed	
3-07-007-04	Waferboard Dryer	*859.0[d]	*17	*114	*409		10^4 Lbs. Wafers/Chips Dried	121, 123
3-07-007-05	Hardboard: Coe Dryer		*NEG	*0.3	*1		Tons of Dry Product	174, 330
3-07-007-06	Hardboard: Predryer		*NEG	*0.3	*1		Tons of Dry Product	330
3-07-007-07	Hardboard: Pressing		*0.0	*NEG	*1.45		Tons of Dry Product	175, 271, 330
3-07-007-08	Hardboard: Tempering		*0.0	*NEG	*NEG		Tons of Dry Product	271, 351
3-07-007-09	Hardboard: Bake Oven		*0.0	*0.1	*0.003		Tons of Product	271, 330
3-07-007-11	Fir-Sapwood-Steam Fired Dryer	4.64	*0.0		0.45		10^4 Sq. Ft. 3/8" Plywood	271
3-07-007-12	Fir-Sapwood-Gas Fired Dryer	2.37	*0.0		7.53		10^4 Sq. Ft. 3/8" Plywood	271
3-07-007-13	Fir-Heartwood Plywood Veneer Dryer	3.18	*0.0		1.3		10^4 Sq. Ft. 3/8" Plywood	271
3-07-007-14	Larch Plywood Veneer Dryer	4.14	*0.0		0.19		10^4 Sq. Ft. 3/8" Plywood	271
3-07-007-15	Southern Pine Plywood Veneer Dryer	3.7	*0.0		2.94		10^4 Sq. Ft. 3/8" Plywood	271
3-07-007-98	Other Not Classified (Specify in Comments)						10^3 Board Feet	
3-07-007-99	Other Not Classified (Specify in Comments)						Tons Processed	
Sawmill Operations - 2421, 2426, 2429								
3-07-008-01	Log Debarking	0.02	*0.0	*0.0	*NEG		Tons of Logs Processed	260
3-07-008-02	Log Sawing	0.35	*0.0	*0.0	*NEG		Tons of Logs Processed	260
3-07-008-03	Sawdust Pile Handling	1.0	*0.0	*0.0	*NEG		Tons of Sawdust	260
3-07-008-04	Sawing: Cyclone Exhaust	2.25[11]	0.0	0.0	0.0	0.0	SCFM Average Airflow	
3-07-008-05	Planning/Trimming: Cyclone Exhaust	2.25[11]	0.0	0.0	0.0	0.0	SCFM Average Airflow	
3-07-008-06	Sanding: Cyclone Exhaust	4.0[11]	0.0	0.0	0.0	0.0	SCFM Average Airflow	
3-07-008-07	Sanderdust: Cyclone Exhaust	5.0	0.0	0.0	0.0	0.0	Hours of Operation	
3-07-008-08	Other Cyclones: Exhaust	2.0	0.0	0.0	0.0	0.0	Hours of Operation	
3-07-008-96	Other Not Classified (Specify in Comments)						10^3 Cubic Feet	
3-07-008-97	Other Not Classified (Specify in Comments)						Gallons	
3-07-008-98	Other Not Classified (Specify in Comments)						10^3 Board Feet	
3-07-008-99	Other Not Classified (Specify in Comments)						Tons Processed	
Paper Coating and Glazing - 2641, 2642, 2643, 2651, 2654, 2655, 2661								
3-07-011-99	Extrusion Coating Line Applications of Solvent Free Resin or Wax)						Tons Resin/Wax Consumed	

---

[*] Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Miscellaneous Paper Products - 2649								
3-07-013-01	Shredding Newspaper for Insulation Manufacture						Tons Newspaper Shredded	
3-07-013-99	Other Not Classified (Specify in Comments)						Tons Processed	
Furniture Manufacturing - 2500-2599[mm]								
3-07-020-98	Other Not Classified (Specify in Comments)		*12.0				10^3 Board Feet	120
3-07-020-99	Other Not Classified (Specify in Comments)						Tons Processed	
Miscellaneous Woodworking Operations - 2421, 2426, 2429, 2431, 2434, 2439[mm]								
3-07-030-01	Wood Waste Storage Bin Vent	1.0	0.0	0.0	0.0	0.0	Tons Wood Waste	
3-07-030-02	Wood Waste Storage Bin Loadout	2.0	0.0	0.0	0.0	0.0	Tons Wood Waste	
3-07-030-96	Sanding/Planning Operations (Specify in Comments)		0.0	0.0	0.0	0.0	10^3 Square Feet	
3-07-030-97	Sanding/Planning Operations (Specify in Comments)		0.0	0.0	0.0	0.0	Each	
3-07-030-98	Sanding/Planning Operations (Specify in Comments)		0.0	0.0	0.0	0.0	10^3 Board Feet	
3-07-030-99	Sanding/Planning Operations (Specify in Comments)		0.0	0.0	0.0	0.0	Tons Processed	
Wood Products - Fugitive Emissions[f]								
3-07-888-01	Specify in Comments Field						Tons Product	
3-07-888-02	Specify in Comments Field						Tons Product	
3-07-888-03	Specify in Comments Field						Tons Product	
3-07-888-04	Specify in Comments Field						Tons Product	
3-07-888-05	Specify in Comments Field						Tons Product	
3-07-888-98	Specify in Comments Field						10^3 Board Feet	
Wood Products - Fuel Fired Equipment								
Process Heaters								
3-07-900-01	Distillate Oil (No. 2)		*144.0 S	*20.0	*0.20		10^3 Gallons Burned	129
3-07-900-02	Residual Oil		*159.0 S	*55.0	*0.28		10^3 Gallons Burned	129
3-07-900-03	Natural Gas		*0.6	*140.0	*2.8		10^6 Cubic Feet Burned	129
Incinerators								
3-07-900-11	Distillate Oil (No. 2)				*0.4		10^3 Gallons Burned	130
3-07-900-12	Residual Oil				*0.56		10^3 Gallons Burned	130
3-07-900-13	Natural Gas				*5.6		10^6 Cubic Feet Burned	130
Flares								
3-07-900-23	Natural Gas				*5.6		10^6 Cubic Feet Burned	130

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Wood Products: Other Not Classified								
3-07-999-98	Specify in Comments						10^3 Board Feet	
RUBBER AND MISCELLANEOUS PLASTICS PRODUCTS - MAJOR GROUP 30 AND 75								
Tire Manufacturing - 3011[nn]								
3-08-001-01	Underthread and Sidewall Cementing				*208.5[d]		10^3 Tires Produced	
3-08-001-02	Bead Dipping				*18.0[d]		10^3 Tires Produced	
3-08-001-03	Bead Swabbing				*18.0		10^3 Tires Produced	180
3-08-001-04	Tire Building				*72.75[d]		10^3 Tires Produced	
3-08-001-05	Tread End Cementing				*33.0[d]		10^3 Tires Produced	
3-08-001-06	Green Tire Spraying				*220.5[d]		10^3 Tires Produced	
3-08-001-07	Tire Curing				*4.4[d]		10^3 Tires Produced	
3-08-001-08	Solvent Mixing				*130		Tons Solvent	214
3-08-001-09	Solvent Storage				*NEG		Tons Solvent	180
3-08-001-10	Solvent Storage				*NEG		10^3 Gallons Throughput	180
3-08-001-20	Undertread and Sidewall Cementing				*1800		Tons Solvent Used	180
3-08-001-21	Tread End Cementing				*1800		Tons Solvent Used	180
3-08-001-22	Bead Dipping				*1800		Tons Solvent Used	180
3-08-001-23	Green Tire Spraying				*1840		Tons Solvent Used	180
3-08-001-97	Other Not Classified (Specify in Comments)						Each	
3-08-001-98	Other Not Classified (Specify in Comments)						Gallons	
3-08-001-99	Other Not Classified (Specify in Comments)						Tons Product	
Tire Retreading - 7534								
3-08-005-01	Tire Buffing Machines		*NEG	*NEG	*600		Tires Processed	143, 316
Other Fabricated Rubber Products - 3021, 3031, 3041, 3069								
3-08-006-99	Other Not Classified (Specify in Comments)						Tons Product	
Fabricated Plastics Products - 3079								
3-08-007-01	Plastics Machining (Drilling, Sanding, Sawing, etc.)		*NEG	*NEG	*13		Tons Processed	143, 316
3-08-007-02	Mold Release		*0.0	*0.0	*NEG		Tons Product	171, 285
3-08-007-03	Solvent Consumption				*640		Tons Solvent	289
3-08-007-04	Adhesive Consumption				*640		Tons Adhesive	289
3-08-007-05	Wax Burnout Oven				*0.0		Tons of Wax Burned	3
Fiberglass Resin Products								
3-08-007-20	General						Tons Produced	
3-08-007-21	Gel Coat-Roll On				*940		Tons Coating Applied	288

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Fiberglass Resin Products (Continued)								
3-08-007-22	Gel Coat-Spray On				*600		Tons Coating Applied	288
3-08-007-23	Resin-General-Roll On				*500		Tons Coating Applied	288
3-08-007-24	Resin-General-Spray On				*220		Tons Coating Applied	288
Fabricated Plastics Products - 3079								
3-08-007-99	Other Not Classified (Specify in Comments)						Tons Product	
Rubber and Miscellaneous Plastics Products - Fuel Fired Equipment								
Process Heaters								
3-08-900-01	Distillate Oil (No. 2)		*144.0 S	*20.0	*0.20		10^3 Gallons Burned	129
3-08-900-02	Residual Oil		*159.0 S	*55.0	*0.28		10^3 Gallons Burned	129
3-08-900-03	Natural Gas		*0.6	*140.0	*2.8		10^6 Cubic Feet Burned	129
Incinerators								
3-08-900-11	Distillate Oil (No. 2)				*0.4		10^3 Gallons Burned	130
3-08-900-12	Residual Oil				*0.56		10^3 Gallons Burned	130
3-08-900-13	Natural Gas				*5.6		10^6 Cubic Feet Burned	130
Flares								
3-08-900-23	Natural Gas				*5.6		10^6 Cubic Feet Burned	130
Rubber and Plastics: Other Not Classified								
3-08-999-99	Specify in Comments						Tons Processed	
FABRICATED METAL PRODUCTS - MAJOR GROUP 34 AND 50								
General Processes								
3-09-001-98	Other Not Classified (Specify in Comments)						Gallons	
3-09-001-99	Other Not Classified (Specify in Comments)						Tons Processed	
Abrasive Blasting of Metal Parts								
3-09-002-01	General		0.0	0.0	0.0	0.0	Tons Abrasive Consumed	
3-09-002-02	Sand Abrasive		0.0	0.0	0.0	0.0	Tons Abrasive Consumed	
3-09-002-03	Slag Abrasive		0.0	0.0	0.0	0.0	Tons Abrasive Consumed	
3-09-002-04	Garnet Abrasive		0.0	0.0	0.0	0.0	Tons Abrasive Consumed	
3-09-002-05	Steel Grit Abrasive		0.0	0.0	0.0	0.0	Tons Abrasive Consumed	
3-09-002-06	Walnut Shell Abrasive		0.0	0.0	0.0	0.0	Tons Abrasive Consumed	
3-09-002-07	Shotblast with Air		0.0	0.0	0.0	0.0	Tons Shot Consumed	
3-09-002-08	Shotblast without Air		0.0	0.0	0.0	0.0	Tons Shot Consumed	
3-09-002-98	General						Linear Feet	
3-09-002-99	General		0.0	0.0	0.0	0.0	Each	

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Abrasive Cleaning of Metal Parts								
3-09-003-01	Brush Cleaning		*NEG	*NEG	*NEG		Tons Abrasive Consumed	262
3-09-003-02	Tumble Cleaning		*NEG	*NEG	*NEG		Tons Abrasive Consumed	262
3-09-003-03	Polishing		*NEG	*NEG	*NEG		Tons Abrasive Consumed	262
3-09-003-04	Buffing		*NEG	*NEG	*NEG		Tons Abrasive Consumed	262
Electroplating Operations - 3471								
3-09-010-01	General: Entire Process		*0.0	*0.009	*0.026		Square Feet of Product Plated	122, 230
3-09-010-97	Other Not Classified (Specify in Comments)						Tons Makeup	
3-09-010-98	Other Not Classified (Specify in Comments)						Gallons	
Conversion Coating of Metal Products - 3471								
3-09-011-01	Alkaline Cleaning Bath		*NEG	*0.3	*0.0		Tons Processed	149, 273, 317
3-09-011-02	Acid Cleaning Bath (Pickling)		*0.6	*13	*0.0		Tons Processed	149, 273, 347
3-09-011-03	Anodizing Kettle		*NEG	*0.2	*0.0		Tons Processed	141, 273, 317
3-09-011-04	Rinsing/Finishing		*NEG	*8.0	*100		Tons Processed	143, 147, 317
3-09-011-99	Other Not Classified (Specify in Comments)						Gallons	
Chemical Milling of Metal Parts - 3471								
3-09-015-01	Milling Tank			*160	*0.0		Tons Processed	3, 141
Metal Pipe Coating with Asphalt/Coal Tar - 3479								
3-09-016-04	Coal Tar/Asphalt Melting Kettle				*NEG		Tons Coating Melted	370
3-09-016-05	Asphalt Dipping				*13		10^3 Sq. Ft. Pipe Processed	370
3-09-016-06	Pipe Spinning				*13		10^3 Sq. Ft. Pipe Processed	370
3-09-016-07	Pipe Wrapping				*13		10^3 Sq. Ft. Pipe Processed	370
Drum Cleaning/Reclamation - 5085								
3-09-025-01	Drum Burning Furnace	0.035	*0.002	*1.5	0.002		Drums Burned	371
Machining Operations								
3-09-030-05	Sawing (Specify Material)						Tons Processed	
3-09-030-06	Honing (Specify Material)						Tons Processed	
Metal Deposition Processes								
3-09-040-01	Metallizing (Wire Atomization and Spraying)		*0.0	*NEG	*340		Tons Sprayed Metal Consumed	143, 283
3-09-040-10	Thermal Spraying of Powdered Metal		*0.0	*0.0	*0.0		Tons Sprayed Metal Consumed	282
3-09-040-20	Plasma Arc Spraying of Powdered Metal		*0.0	*0.0	*130		Tons Sprayed Metal Consumed	261

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42

SCC	Process	PART Lbs/Unit	SO$_x$ Lbs/Unit	NO$_x$ Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Porcelain Enamel and Ceramic Glaze Spraying - 3431								
3-09-060-01	Spray Booth						Gallons Wet Slurry Sprayed	
3-09-060-99	Spray Booth						Tons Processed	
Fabricated Metals - Fugitive Emissions[f]								
3-09-888-01	Specify in Comments Field						Tons Product	
3-09-888-02	Specify in Comments Field						Tons Product	
3-09-888-03	Specify in Comments Field						Tons Product	
3-09-888-04	Specify in Comments Field						Tons Product	
3-09-888-05	Specify in Comments Field						Tons Product	
Fabricated Metal Products - Fuel Fired Equipment								
Process Heaters								
3-09-900-01	Distillate Oil (No. 2)		*144.0 S	*20.0	*0.20		10^3 Gallons Burned	129
3-09-900-02	Residual Oil		*159.0 S	*55.0	*0.28		10^3 Gallons Burned	129
3-09-900-03	Natural Gas		*0.6	*140.0	*2.8		10^6 Cubic Feet Burned	129
Incinerators								
3-09-900-11	Distillate Oil (No. 2)				*0.4		10^3 Gallons Burned	130
3-09-900-12	Residual Oil				*0.56		10^3 Gallons Burned	130
3-09-900-13	Natural Gas				*5.6		10^6 Cubic Feet Burned	130
Flares								
3-09-900-23	Natural Gas				*5.6		10^6 Cubic Feet Burned	130
Fabricated Metal Products: Other Not Classified								
3-09-999-97	Other Not Classified (Specify in Comments)						10^3 Pieces Processed	
3-09-999-98	Other Not Classified (Specify in Comments)						10^6 Pieces Processed	
3-09-999-99	Other Not Classified (Specify in Comments)						Tons Processed	
OIL AND GAS PRODUCTION - MAJOR GROUP 13								
Crude Oil Production - 1311								
3-10-001-01	Complete Well: Fugitive Emissions				*396		Wells/Year in Operation	3
3-10-001-02	Miscellaneous Wells: General				*280		Wells/Year in Operation	3
3-10-001-03	Wells-Rod Pumps				*455		Wells/Year in Operation	3
3-10-001-04	Crude Oil Sumps				*9		Sq. Ft. Sump Area/Year	62
3-10-001-05	Crude Oil Pits				*9		Sq. Ft. Pit Area/Year	62
3-10-001-99	Processing Operations: Not Classified (Specify in Comments)						10^3 BBLs. Produced	

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO$_x$ Lbs/Unit	NO$_x$ Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Natural Gas Production - 1311								
3-10-002-01	Gas Sweeting (Amine Process) (Smokeless Flares/Tail Gas Incinerators)	0.0	1685.0 S^{oo}	0.0	0.0	0.0	10^6 Cubic Feet of Sour Processed	
3-10-002-02	Gas Stripping Operations		*310		*6.0		10^6 Cubic Feet of Gas Produced	146, 369
3-10-002-03	Compressors				*6.0		10^6 Cubic Feet of Gas Produced	63
3-10-002-04	Wells				*35		10^6 Cubic Feet of Gas Produced	7
3-10-002-05	Flares				*5.6		10^6 Cubic Feet of Gas Produced	130
3-10-002-06	Gas Lift				*6.0		10^6 Cubic Feet of Gas Produced	369
3-10-002-07	Valves (Fugitive Emissions)						Lbs/Year	
3-10-002-99	Other Not Classified (Specify in Comments)						10^6 Cubic Feet of Gas Produced	
Oil and Gas Production - Fuel Fired Equipment								
Process Heaters								
3-10-004-01	Distillate Oil	2.0	144.0 S	20.0	0.20	5.0	10^3 Gallons Burned	
3-10-004-02	Residual Oil	*12.0 S^b	159.0 S	55.0	0.28	5.0	10^3 Gallons Burned	
3-10-004-03	Crude Oil	*12.0 S^b	159.0 S	55.0	0.28	5.0	10^3 Gallons Burned	
3-10-004-04	Natural Gas	3.0	0.6	140.0	2.8	35.0	10^6 Cubic Feet Burned	
3-10-004-05	Process Gas	3.0	*950.0 S^c	140.0	2.8	35.0	10^6 Cubic Feet Burned	
Steam Generators								
3-10-004-11	Distillate Oil	2.0	144.0 S	20.0	0.20	5.0	10^3 Gallons Burned	
3-10-004-12	Residual Oil	*12.0 S^b	159.0 S	55.0	0.28	5.0	10^3 Gallons Burned	
3-10-004-13	Crude Oil	*12.0 S^b	159.0 S	55.0	0.28	5.0	10^3 Gallons Burned	
3-10-004-14	Natural Gas	3.0	0.6	140.0	2.8	35.0	10^6 Cubic Feet Burned	
3-10-004-15	Process Gas	3.0	*950.0 S^c	140.0	2.8	35.0	10^6 Cubic Feet Burned	
Oil and Gas Production - Fugitive Emissions^f								
3-10-888-01	Specify in Comments Field#						Process Unit/Year	
3-10-888-02	Specify in Comments Field#						Process Unit/Year	
3-10-888-03	Specify in Comments Field#						Process Unit/Year	
3-10-889-04	Specify in Comments Field#						Process Unit/Year	
3-10-888-05	Specify in Comments Field#						Process Unit/Year	

#Note that fugitive emissions are reported in units of lbs/process unit-year rather than lbs/10^3 BBl. feed produced as in the NEDS Source Classification Codes and Emission Factor Listing dated October 1985.

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
BUILDING CONSTRUCTION - MAJOR GROUP 15								
Construction: Building Contractors								
3-11-001-99	Other Not Classified (Specify in Comments)						Acres of Construction Activity	
Construction: Special Trade Contract								
3-11-002-99	Other Not Classified (Specify in Comments)						Acres of Construction Activity	
MACHINERY, MISCELLANEOUS - MAJOR GROUP 25								
Miscellaneous Machinery								
3-12-999-99	Other Not Classified (Specify in Comments)						Tons Processed	
ELECTRICAL EQUIPMENT - MAJOR GROUP 76								
Electrical Windings Reclamation - 7694								
3-13-070-01	Single Chamber Incinerator/Oven		*2.5		*950		Tons Charged	92
3-13-070-02	Multiple Chamber Incinerator/Oven		*2.5	*0.1	*190		Tons Charged	141, 143
Electrical Equipment - Fuel Fired Equipment								
Process Heaters								
3-13-900-01	Distillate Oil (No. 2)		*144.0 S	*20.0	*0.20		10^3 Gallons Burned	129
3-13-900-02	Residual Oil		*159.0 S	*55.0	*0.28		10^3 Gallons Burned	129
3-13-900-03	Natural Gas		*0.6	*140.0	*2.8		10^6 Cubic Feet Burned	129
Miscellaneous Electrical Equipment								
3-13-999-99	Other Not Classified (Specify in Comments)						Tons Processed	
TRANSPORTATION EQUIPMENT - MAJOR GROUP 37, 50, 75								
Automobile/Truck Assembly Operations - 3711, 3713								
3-14-009-01	Solder Joint Grinding		0.0	0.0	0.0	0.0	Number of Vehicles	
Brake Shoe Debonding - 7539								
3-14-010-01	Single Chamber Incinerator		*2.5		*950		Tons Charged	92
3-14-010-02	Multiple Chamber Incinerator		*2.5		*190		Tons Charged	92
Auto Body Shredding - 5093								
3-14-011-01	Primary Metal Recovery Line		*NEG	*NEG	*NEG		Tons Scrap Processed	262
3-14-011-02	Secondary Metal Recovery Line		*NEG	*NEG	*NEG		Tons Scrap Processed	262

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO$_x$ Lbs/Unit	NO$_x$ Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Miscellaneous Transportation Equipment								
3-14-999-99	Other Not Classified (Specify in Comments)						Tons Processed	
PHOTOGRAPHIC EQUIPMENT - MAJOR GROUP 38								
Photocopying Equipment Manufacture - 3861								
3-15-010-01	Resin Transfer/Storage				*NEG		10^3 Pounds Resin	285
3-15-010-02	Toner Classification				*630		10^3 Pounds Toner	143
3-15-010-03	Toner (Carbon Black) Grinding				*NEG		10^3 Pounds Toner	285
HEALTH SERVICES - MAJOR GROUP 80								
Hospitals - 8062								
3-15-020-01	Sterilization with Ethylene Oxide				*2000		Tons Ethylene Oxide Consumed	64
LEATHER AND LEATHER PRODUCTS - MAJOR GROUP 31								
Leather and Leather Products - 3111-3199								
3-20-999-97	Other Not Classified (Specify in Comments)						10^3 Square Feet	
3-20-999-98	Other Not Classified (Specify in Comments)				*19		Gallons	123
3-20-999-99	Other Not Classified (Specify in Comments)						Tons Processed	
TEXTILE PRODUCTS - MAJOR GROUPS 22 AND 30								
Miscellaneous General Fabric Operations - 2261, 2262, 2281-2284, 2294, 2297, 2299								
3-30-001-01	Yarn Preparation/Bleaching				*NEG		Tons Fabric Processed	285
3-30-001-02	Printing[pp]				*284		Tons Fabric Processed	117
3-30-001-03	Polyester Thread Production				*NEG		Tons Fabric Processed	285
3-30-001-04	Tenter Frames: Heat Setting				*0.47		Tons Fabric Processed	118
3-30-001-05	Carding				*NEG		Tons Fabric Processed	285
3-30-001-98	Other Not Classified (Specify in Comments)						10^3 Feet	
3-30-001-99	Other Not Classified (Specify in Comments)						Tons Fabric Processed	
Rubberized Fabric - 3069, 2241								
3-30-002-11	Impregnation				*120		Tons Coating Applied	340
3-30-002-12	Wet Coating				*1200		Tons Coating Applied	340
3-30-002-13	Hot Melt Coating				*120		Tons Coating Applied	340

[*] Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Rubberized Fabric - 3069, 2241 (Continued)								
3-30-002-14	Wet Coating Mixing				*133		Tons Coating Applied	340
3-30-002-98	Other Not Classified (Specify in Comments)						Gallons	
3-30-002-99	Other Not Classified (Specify in Comments)						Tons Processed	
Carpet Operations - 2271, 2272, 2279								
3-30-003-99	Other Not Classified (Specify in Comments)						Tons Processed	
Fabric Finishing - 2261, 2262, 2269 (Shrink Proofing, Water Proofing, Anti Wrinkling, Sizing, etc.)								
3-30-004-99	Other Not Classified (Specify in Comments)						Tons Fabric Processed	
3-30-005-99	Other Not Classified (Specify in Comments)						Items Produced	
Textile Products - Fugitive Emissions[f]								
3-30-888-01	Specify in Comments Field#						Process Unit-Year	
3-30-888-02	Specify in Comments Field#						Process Unit-Year	
3-30-888-03	Specify in Comments Field#						Process Unit-Year	
3-30-888-04	Specify in Comments Field#						Process Unit-Year	
3-30-888-05	Specify in Comments Field#						Process Unit-Year	
PRINTING AND PUBLISHING - TYPESETTING - MAJOR GROUP 27								
Typesetting (Lead Remelting) - 2791								
3-60-001-01	Remelting (Lead Emissions Only)	0.7					Tons Melted	
IN-PROCESS FUEL USE[qq]								
Anthracite Coal								
3-90-001-99	General	0.0	0.0	0.0	0.0[qq]	0.0	Tons Burned	
Bituminous Coal								
3-90-002-01	Cement Kiln/Dryer	0.0	*26.0 S[rr]	0.0	0.0[qq]	0.0	Tons Burned	
3-90-002-03	Lime Kiln	0.0	*19.0 S[rr]	0.0	0.0[qq]	0.0	Tons Burned	
3-90-002-99	General	0.0	0.0	0.0	0.0[qq]	0.0	Tons Burned	
Lignite								
3-90-003-99	General	0.0	0.0	0.0	0.0[qq]	0.0	Tons Burned	

[#] Note that fugitive emissions are reported in units of lbs/process unit-year rather than lbs/ton product as in the NEDS Source Classification Codes and Emission Factor Listing dated October 1985.

[*] Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Residual Oil								
3-90-004-02	- Cement Kiln/Dryer	0.0	*108.0 S^{rr}	0.0	0.0^{qq}	0.0	10^3 Gallons Burned	
3-90-004-03	- Lime Kiln	0.0	*79.5 S^{rr}	0.0	0.0^{qq}	0.0	10^3 Gallons Burned	
3-90-004-99	- General	0.0	0.0	0.0	0.0^{qq}	0.0	10^3 Gallons Burned	
Distillate Oil								
3-90-005-02	- Cement Kiln/Dryer	0.0	*98.0 S^{rr}	0.0	0.0^{qq}	0.0	10^3 Gallons Burned	
3-90-005-03	- Lime Kiln	0.0	*72.0 S^{rr}	0.0	0.0^{qq}	0.0	10^3 Gallons Burned	
3-90-005-98	- Grade 4 Oil: General	0.0	0.0	0.0	0.0^{qq}	0.0	10^3 Gallons Burned	
3-90-005-99	- General	0.0	0.0	0.0	0.0^{qq}	0.0	10^3 Gallons Burned	
Natural Gas								
3-90-006-02	- Cement Kiln/Dryer	0.0	0.0	0.0	0.0^{qq}	0.0	10^6 Cubic Feed Burned	
3-90-006-03	- Lime Kiln	0.0	0.0	0.0	0.0^{qq}	0.0	10^6 Cubic Feed Burned	
3-90-006-99	- General	0.0	0.0	0.0	0.0^{qq}	0.0	10^6 Cubic Feed Burned	
Process Gas								
3-90-007-01	- Coke Oven or Blast Furnace	0.0	0.0	0.0	0.0^{qq}	0.0	10^6 Cubic Feed Burned	
3-90-007-02	- Coke Oven Gas	0.0	0.0	0.0	0.0^{qq}	0.0	10^6 Cubic Feed Burned	
3-90-007-97	- General: Specify in Comments	0.0	0.0	0.0	0.0^{qq}	0.0	10^6 Cubic Feed Burned	
3-90-007-98	- General: Specify in Comments	0.0	0.0	0.0	0.0^{qq}	0.0	10^6 Cubic Feed Burned	
3-90-007-99	- General: Specify in Comments	0.0	0.0	0.0	0.0^{qq}	0.0	10^6 Cubic Feed Burned	
Coke								
3-90-008-99	- General	0.0	0.0	0.0	0.0^{qq}	0.0	Tons Burned	
Wood								
3-90-009-99	- General	0.0	0.0	0.0	0.0^{qq}	0.0	Tons Burned	
Liquified Petroleum Gas								
3-90-010-99	- General	0.0	0.0	0.0	0.0^{qq}	0.0	10^3 Gallons Burned	
Solid Waste								
3-90-012-99	- Specify in Comments	0.0	0.0	0.0	0.0^{qq}	0.0	Tons Burned	
Liquid Waste								
3-90-013-99	- Specify in Comments	0.0	0.0	0.0	0.0^{qq}	0.0	10^3 Gallons Burned	
MISCELLANEOUS MANUFACTURING INDUSTRIES - MAJOR GROUP 39								
Miscellaneous Manufacturing Industries - Fuel Fired Equipment								
Process Heaters								
3-99-900-01	- Distillate Oil (No. 2)		*144.0 S	*20.0	*0.20		10^3 Gallons Burned	129
3-99-900-02	- Residual Oil		*159.0 S	*55.0	*0.28		10^3 Gallons Burned	129

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Process Heaters (Continued)								
3-99-900-03	Natural Gas		*0.6	*140.0	*2.8		10^6 Cubic Feet Burned	129
3-99-900-04	Process Gas		*950.0 S	*140.0	*2.8		10^6 Cubic Feet Burned	129
Incinerators								
3-99-900-11	Distillate Oil (No. 2)				*0.4		10^3 Gallons Burned	130
3-99-900-12	Residual Oil				*0.56		10^3 Gallons Burned	130
3-99-900-13	Natural Gas				*5.6		10^6 Cubic Feet Burned	130
3-99-900-14	Process Gas				*5.6		10^6 Cubic Feet Burned	130
Flares								
3-99-900-23	Natural Gas				*5.6		10^6 Cubic Feet Burned	130
3-99-900-24	Process Gas				*5.6		10^6 Cubic Feet Burned	130
Miscellaneous Industrial Processes								
3-99-999-93	Other Not Classified (Specify in Comments)						Parts Processed	
3-99-999-94	Other Not Classified (Specify in Comments)						Pounds Processed	
3-99-999-95	Other Not Classified (Specify in Comments)						Gallons	
3-99-999-96	Other Not Classified (Specify in Comments)						10^3 Gallons	
3-99-999-98	Other Not Classified (Specify in Comments)						10^3 Parts Produced	
3-99-999-99	Other Not Classified (Specify in Comments)						Tons Processed	
ORGANIC SOLVENT EVAPORATION - DRY CLEANING - MAJOR GROUP 72								
Dry Cleaning - 7215, 7216, 7218								
4-01-001-01	Perchloroethylene	0.0	0.0	0.0	550.0	0.0	Tons Clothes Cleaned	
4-01-001-02	Stoddard (Petroleum Solvent)	0.0	0.0	0.0	560.0^d	0.0	Tons Clothes Cleaned	
4-01-001-03	Perchloroethylene	0.0	0.0	0.0	*2,000.0^d	0.0	Tons Solvent Consumed	
4-01-001-04	Stoddard (Petroleum Solvent)	0.0	0.0	0.0	*2,000.0^d	0.0	Tons Solvent Consumed	
4-01-001-05	Trichlorotrifluoroethane^{tt} (Freon)	0.0	0.0	0.0	0.0	0.0	Tons Solvent Consumed	
4-01-001-06	Trichlorotrifluoroethane^{tt} (Freon)	0.0	0.0	0.0	0.0	0.0	Tons Clothes Cleaned	
4-01-001-98	Other Not Classified (Specify in Comments)	0.0	0.0	0.0		0.0	Tons Solvent Consumed	
ORGANIC SOLVENT EVAPORATION - DEGREASING - METAL CLEANING - MAJOR GROUPS 25, 33-39, 75^{aa}								
Open-Top Vapor Degreasing								
4-01-002-01	Stoddard (Petroleum Naphtha)	0.0	0.0	0.0	2,000.0	0.0	Tons Make-Up Solvent Used	
4-01-002-02	1,1,1-Trichloroethane^{tt} (Methyl Chloroform)	0.0	0.0	0.0	0.0	0.0	Tons Make-Up Solvent Used	

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Open-Top Vapor Degreasing (Continued)								
4-01-002-03	Perchloroethylene	0.0	0.0	0.0	2,000.0	0.0	Tons Make-Up Solvent Used	
4-01-002-04	Methylene Chloride[tt]	0.0	0.0	0.0	0.0	0.0	Tons Make-Up Solvent Used	
4-01-002-05	Trichloroethylene	0.0	0.0	0.0	2,000.0	0.0	Tons Make-Up Solvent Used	
4-01-002-06	Toluene	0.0	0.0	0.0	2,000.0	0.0	Tons Make-Up Solvent Used	
4-01-002-07	Trichlorotrifluoroethane[tt]	0.0	0.0	0.0	0.0	0.0	Tons Make-Up Solvent Used	
4-01-002-08	Chlorosolve	*0.0	*0.0	*0.0	*2,000.0	*0.0	Tons Make-Up Solvent Used	332
4-01-002-15	Entire Unit[uu]	0.0	0.0	0.0	21,000.0	0.0	Number of Degreasing Units in Operation-Year	
4-01-002-16	Entire Unit[uu]	0.0	0.0	0.0	180.0	0.0	10^3 Sq. Ft. Product Surface Area	
4-01-002-17	Entire Unit[uu]	0.0	0.0	0.0	0.15	0.0	Sq. Ft. Surface Area Per Hours of Operation	
4-01-002-97	Other Not Classified (Specify in Comments)	0.0	0.0	0.0		0.0	Gallons Solvent Used	
4-01-002-99	Other Not Classified (Specify in Comments)						Tons Make-Up Solvent Used	
Conveyorized Vapor Degreasing								
4-01-002-21	Stoddard (Petroleum Naphtha)	0.0	0.0	0.0	2,000.0	0.0	Tons Make-Up Solvent Used	
4-01-002-22	1,1,1-Trichloroethane[tt]	0.0	0.0	0.0	0.0	0.0	Tons Make-Up Solvent Used	
4-01-002-23	Perchloroethylene	0.0	0.0	0.0	2,000.0	0.0	Tons Make-Up Solvent Used	
4-01-002-24	Methylene Chloride[tt]	0.0	0.0	0.0	0.0	0.0	Tons Make-Up Solvent Used	
4-01-002-25	Trichloroethylene	0.0	0.0	0.0	2,000.0	0.0	Tons Make-Up Solvent Used	
4-01-002-35	Entire Unit: with Vaporized[uu] Solvent	0.0	0.0	0.0	52,000.0	0.0	Number of Degreasing Units in Operation-Year	
4-01-002-36	Entire Unit: with Nonboiling[uu] Solvent	0.0	0.0	0.0	104,000.0	0.0	Number of Degreasing Units in Operation-Year	
4-01-002-96	Other Not Classified (Specify in Comments)	0.0	0.0	0.0			Gallons Solvent Used	
4-01-002-98	Other Not Classified (Specify in Comments)						Tons Make-Up Solvent Used	
Degreasing Units - General								
4-01-002-51	Stoddard Solvent	0.0	0.0	0.0	*7.2	0.0	Gallons Solvent Consumed	157
4-01-002-52	1,1,1-Trichloroethane[tt]	0.0	0.0	0.0	*0.0	0.0	Gallons Solvent Consumed	157
4-01-002-53	Perchloroethylene	0.0	0.0	0.0	*13.4	0.0	Gallons Solvent Consumed	157
4-01-002-54	Methylene Chloride[tt]	0.0	0.0	0.0	*0.0	0.0	Gallons Solvent Consumed	157
4-01-002-55	Trichloroethylene	0.0	0.0	0.0	*12.1	0.0	Gallons Solvent Consumed	157
4-01-002-56	Toluene	0.0	0.0	0.0	*7.2	0.0	Gallons Solvent Consumed	157
4-01-002-57	Trichlorotrifluoroethane	0.0	0.0	0.0	*0.0	0.0	Gallons Solvent Consumed	157
4-01-002-95	Other Not Classified (Specify in Comments)	0.0	0.0	0.0		0.0	Gallons Solvent Consumed	

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Cold Solvent Cleaning/Stripping								
4-01-003-01	Methanol	0.0	0.0	0.0	2,000.0	0.0	Tons Solvent Consumed	
4-01-003-02	Methylene Chloride[tt]	0.0	0.0	0.0	0.0	0.0	Tons Solvent Consumed	
4-01-003-03	Stoddard (Petroleum Solvent)	0.0	0.0	0.0	2,000.0	0.0	Tons Solvent Consumed	
4-01-003-04	Perchloroethylene	0.0	0.0	0.0	2,000.0	0.0	Tons Solvent Consumed	
4-01-003-05	1,1,1-Trichloroethane[tt] (Methyl Chloroform)	0.0	0.0	0.0	0.0	0.0	Tons Solvent Consumed	
4-01-003-06	Trichloroethylene	0.0	0.0	0.0	2,000.0	0.0	Tons Solvent Consumed	
4-01-003-35	Entire Unit[uu]	0.0	0.0	0.0	660.0	0.0	Number of Cold Solvent Cleaners in Operation-Year	
4-01-003-36	Entire Unit[uu]	0.0	0.0	0.0	96.0	0.0	10^3 Sq. Ft. Product Surface Area	
4-01-003-98	Other Not Classified (Specify in Comments)						Gallons Solvent Consumed	
4-01-003-99	Other Not Classified (Specify in Comments)						Tons Solvent Consumed	
Knit Fabric Scouring with Chlorinated Solvent - 2211-2241, 2261-2269, 2281-2284 (Removal of Finish Oils from Fabric)								
4-01-004-01	Perchloroethylene	0.0	0.0	0.0	2,000.0	0.0	Tons Solvent Consumed	
4-01-004-99	Other Not Classified (Specify in Comments)						Tons Solvent Consumed	
Organic Solvent Evaporation - Fugitive Emissions[f]								
4-01-888-01	Specify in Comments Field						Tons Product	
4-01-888-02	Specify in Comments Field						Tons Product	
4-01-888-03	Specify in Comments Field						Tons Product	
4-01-888-04	Specify in Comments Field						Tons Product	
4-01-888-05	Specify in Comments Field						Tons Product	
4-01-888-98	Specify in Comments Field						Gallons	
SURFACE COATING OPERATIONS[vv]								
Coating Application - General								
4-02-001-01	Paint: Solvent-Base		0.0	0.0	1,120.0	0.0	Tons Coating Mix Applied	
4-02-001-10	Paint: Solvent-Base		0.0	0.0	*5.6[c]	0.0	Gallons of Coating	
4-02-002-01	Paint: Water-Base		0.0	0.0	*180.0[d]	0.0	Tons Coating Mix Applied	
4-02-002-10	Paint: Water-Base		0.0	0.0	*1.0[d]	0.0	Gallons of Coating	
4-02-003-01	Varnish/Shellac		0.0	0.0	1,000.0	0.0	Tons Coating Mix Applied	
4-02-003-10	Varnish/Shellac		0.0	0.0	*3.5[c]	0.0	Gallons of Coating	
4-02-004-01	Lacquer		0.0	0.0	1,540.0	0.0	Tons Coating Mix Applied	
4-02-004-10	Lacquer		0.0	0.0	*6.5[c]	0.0	Gallons of Coating	

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Coating Application - General (Continued)								
4-02-005-01	Enamel	0.0	0.0	0.0	840.0	0.0	Tons Coating Mix Applied	
4-02-005-10	Enamel		0.0	0.0	3.8^{vv}	0.0	Gallons of Coating	
4-02-006-01	Primer		0.0	0.0	1,320.0	0.0	Tons Coating Mix Applied	
4-02-006-10	Primer		0.0	0.0	*6.6^{c}	0.0	Gallons of Coating	
4-02-007-01	Adhesive Application		0.0	0.0	*900	0.0	Tons Coating Mix Applied	65
4-02-007-06	Adhesive: Solvent Mixing	0.0	0.0	0.0	*200	0.0	Tons Solvent Mixed	293
4-02-007-07	Adhesive: Solvent Storage	0.0	0.0	0.0	*NEG	0.0	Tons Solvent Stored	293
4-02-007-10	Adhesive		0.0	0.0	*4.4	0.0	Gallons of Coating	66
Coating Oven								
4-02-008-01	General		*5.0	*54	*800		Tons Coating	67, 146, 212
4-02-008-10	General		*1	*13	*42		Gallons of Coating	132, 296
4-02-008-98	General						10^3 Feet	
Thinning Solvents$^{ss, xx}$								
4-02-009-01	General: Specify in Comments	0.0	0.0	0.0	2,000.0	0.0	Tons Solvent	
4-02-009-02	Acetone	0.0	0.0	0.0	2,000.0	0.0	Tons Solvent	
4-02-009-03	Butyl Acetate	0.0	0.0	0.0	2,000.0	0.0	Tons Solvent	
4-02-009-04	Butyl Alcohol	0.0	0.0	0.0	2,000.0	0.0	Tons Solvent	
4-02-009-05	Carbitol	0.0	0.0	0.0	2,000.0	0.0	Tons Solvent	
4-02-009-06	Cellosolve	0.0	0.0	0.0	2,000.0	0.0	Tons Solvent	
4-02-009-07	Cellosolve Acetate	0.0	0.0	0.0	2,000.0	0.0	Tons Solvent	
4-02-009-08	Dimethyl Formamide	0.0	0.0	0.0	2,000.0	0.0	Tons Solvent	
4-02-009-09	Ethyl Acetate	0.0	0.0	0.0	2,000.0	0.0	Tons Solvent	
4-02-009-10	Ethyl Alcohol	0.0	0.0	0.0	2,000.0	0.0	Tons Solvent	
4-02-009-11	Gasoline	0.0	0.0	0.0	2,000.0	0.0	Tons Solvent	
4-02-009-12	Isopropyl Alcohol	0.0	0.0	0.0	2,000.0	0.0	Tons Solvent	
4-02-009-13	Isopropyl Acetate	0.0	0.0	0.0	2,000.0	0.0	Tons Solvent	
4-02-009-14	Kerosene	0.0	0.0	0.0	2,000.0	0.0	Tons Solvent	
4-02-009-15	Lactol Spirits	0.0	0.0	0.0	2,000.0	0.0	Tons Solvent	
4-02-009-16	Methyl Acetate	0.0	0.0	0.0	2,000.0	0.0	Tons Solvent	
4-02-009-17	Methyl Alcohol	0.0	0.0	0.0	2,000.0	0.0	Tons Solvent	
4-02-009-18	MEK	0.0	0.0	0.0	2,000.0	0.0	Tons Solvent	
4-02-009-19	MIBK	0.0	0.0	0.0	2,000.0	0.0	Tons Solvent	
4-02-009-20	Mineral Spirits	0.0	0.0	0.0	2,000.0	0.0	Tons Solvent	
4-02-009-21	Naphtha	0.0	0.0	0.0	2,000.0	0.0	Tons Solvent	
4-02-009-22	Toluene	0.0	0.0	0.0	2,000.0	0.0	Tons Solvent	
4-02-009-23	Varsol	0.0	0.0	0.0	2,000.0	0.0	Tons Solvent	
4-02-009-24	Xylene	0.0	0.0	0.0	2,000.0	0.0	Tons Solvent	
4-02-009-25	Benzene	0.0	0.0	0.0	2,000.0	0.0	Tons Solvent	
4-02-009-26	Turpentine	0.0	0.0	0.0	2,000.0	0.0	Tons Solvent	
4-02-009-27	Hexylene Glycol	*0.0	*0.0	*0.0	*2,000.0	*0.0	Tons Solvent	332

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO$_x$ Lbs/Unit	NO$_x$ Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Thinning Solvents (Continued)$^{ss, xx}$								
4-02-009-28	Ethylene Oxide	*0.0	*0.0	*0.0	*2,000.0	*0.0	Tons Solvent	332
4-02-009-98	General: Specify in Comments	0.0	0.0	0.0		0.0	Gallons Solvent	
Coating Oven Heater^{vv}								
4-02-010-01	Natural Gas		*0.6	*140.0	*2.8		10^6 Cubic Feet Burned	91, 130
4-02-010-02	Distillate Oil		*144.0 S	*20.0	*0.20		10^3 Gallons Burned	91, 130
4-02-010-03	Residual Oil		*159.0 S	*55.0	*0.28		10^3 Gallons Burned	91, 130
4-02-010-04	Liquified Petroleum Gas (LPG)		*86.5 S	*9.0	*0.5		10^3 Gallons Burned	91, 130
Fabric Coating - 2295^{PP}								
4-02-011-01	Coating Operation		0.0	0.0	*1,600	0.0	Tons Solvent in Coating	287
4-02-011-03	Coating Mixing		0.0	0.0	*200	0.0	Tons Solvent in Coating	287
4-02-011-04	Coating Storage		0.0	0.0	*NEG	0.0	Tons Solvent in Coating	287
4-02-011-05	Equipment Cleanup		0.0	0.0	*200	0.0	Tons Solvent in Coating	287
Fabric Printing - 2261, 2262, 2269^{PP}								
4-02-011-11	Fabric Printing: Roller				284.0		Tons of Fabric	
4-02-011-12	Fabric Printing: Roller^{yy}				278,000.0		Number of Printing Lines-Year	
4-02-011-13	Fabric Printing: Rotary Screen				46.0		Tons of Fabric	
4-02-011-14	Fabric Printing: Rotary Screen^{yy}				62,000.0		Number of Printing Lines-Year	
4-02-011-15	Fabric Printing: Flat Screen				158.0		Tons of Fabric	
4-02-011-16	Fabric Printing: Flat Screen^{yy}				62,000.0		Number of Printing Lines-Year	
4-02-011-99	Other Not Classified (Specify in Comments)						Tons Solvent in Coating	
Fabric Dyeing - 2211-2241, 2261-2269, 2281-2284^{PP}								
4-02-012-01	Dye Application: General		0.0	0.0	*196	0.0	Tons Dye Consumed	117
4-02-012-10	Dye Application: General		0.0	0.0		0.0	Gallons Dye Consumed	
Application of Solvent-Borne Coating (Paper Coating)								
4-02-013-01	Coating Operation		0.0	0.0	*1,400	0.0	Tons Solvent in Coating	287
4-02-013-03	Coating Mixing		0.0	0.0	*300	0.0	Tons Solvent in Coating	287
4-02-013-04	Coating Storage		0.0	0.0	*NEG	0.0	Tons Solvent in Coating	287
4-02-013-05	Equipment Cleaning		0.0	0.0	*300	0.0	Tons Solvent in Coating	287
4-02-013-99	Other Not Classified (Specify in Comments)						Tons Solvent in Coating	
Surface Coating of Large Appliances - 363, 365, 343, 358^{zz}								
4-02-014-01	Prime Coating Operation		0.0	0.0	*900	0.0	Tons Solvent in Coating	290
4-02-014-02	Cleaning/Pretreatment		0.0	0.0	*NEG	0.0	Tons Solvent in Coating	290
4-02-014-03	Coating Mixing		0.0	0.0	*200	0.0	Tons Solvent in Coating	290
4-02-014-04	Coating Storage		0.0	0.0	*NEG	0.0	Tons Solvent in Coating	290
4-02-014-05	Equipment Cleanup		0.0	0.0	*200	0.0	Tons Solvent in Coating	290
4-02-014-06	Topcoat Spray		0.0	0.0	*700	0.0	Tons Solvent in Coating	290

---

[*] Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Surface Coating of Large Appliances - 363, 365, 343, 358 (Continued)[zz]								
4-02-014-31	Coating Line-General		0.0	0.0	0.9	0.0	Number of Appliances Produced	
4-02-014-32	Prime Air Spray		0.0	0.0	3.1	0.0	10^3 Sq. Ft. Product Surface Area	
4-02-014-33	Prime Electrostatic Spray		0.0	0.0	1.75	0.0	10^3 Sq. Ft. Product Surface Area	
4-02-014-34	Prime Flow Coat		0.0	0.0	1.65	0.0	10^3 Sq. Ft. Product Surface Area	
4-02-014-35	Prime Dip Coat		0.0	0.0	1.65	0.0	10^3 Sq. Ft. Product Surface Area	
4-02-014-36	Prime Electro-Deposition		0.0	0.0	1.5	0.0	10^3 Sq. Ft. Product Surface Area	
4-02-014-37	Top Air Spray		0.0	0.0	5.0	0.0	10^3 Sq. Ft. Product Surface Area	
4-02-014-38	Top Electrostatic Spray		0.0	0.0	2.8	0.0	10^3 Sq. Ft. Product Surface Area	
4-02-014-99	Other Not Classified (Specify in Comments)						Tons Solvent in Coating	
Magnet Wire Surface Coating - 3357, 3351								
4-02-015-01	Coating/Application/Curing		0.0	0.0	*1,600	0.0	Tons Solvent in Coating	293
4-02-015-02	Cleaning/Pretreatment		0.0	0.0	*NEG	0.0	Tons Solvent in Coating	293
4-02-015-03	Coating Mixing		0.0	0.0	*200	0.0	Tons Solvent in Coating	293
4-02-015-04	Coating Storage		0.0	0.0	*NEG	0.0	Tons Solvent in Coating	293
4-02-015-05	Equipment Cleanup		0.0	0.0	*200	0.0	Tons Solvent in Coating	293
4-02-015-31	Coating Line-General		0.0	0.0	186,000.0	0.0	Number of Coating Lines	
4-02-015-99	Other Not Classified (Specify in Comments)						Tons Solvent in Coating	
Surface Coating of Automobiles and Light Trucks - 3771, 3713								
4-02-016-01	Prime Application, Electro-Deposition/Dip/Spray	9.68	0.0	0.0	*500	0.0	Tons Solvent in Coating	298, 348
4-02-016-02	Cleaning/Pretreatment		0.0	0.0	*NEG	0.0	Tons Solvent in Coating	348
4-02-016-03	Coating Mixing		0.0	0.0	*200	0.0	Tons Solvent in Coating	348
4-02-016-04	Coating Storage		0.0	0.0	*NEG	0.0	Tons Solvent in Coating	348
4-02-016-05	Equipment Cleanup		0.0	0.0	*200	0.0	Tons Solvent in Coating	348
4-02-016-06	Topcoat Operation		0.0	0.0	*800	0.0	Tons Solvent in Coating	348
4-02-016-19	Prime Surfacing Operation		0.0	0.0	*100	0.0	Tons Solvent in Coating	348
4-02-016-20	Repair Topcoat Application Area		0.0	0.0	*200	0.0	Tons Solvent in Coating	348
Automobiles - 3711								
4-02-016-21	Prime Coating: Solvent-Borne		0.0	0.0	14.54	0.0	Number of Autos Produced	
4-02-016-22	Prime Coating: Electro-Deposition		0.0	0.0	0.45	0.0	Number of Autos Produced	
4-02-016-23	Guide Coating: Solvent-Borne		0.0	0.0	4.16	0.0	Number of Autos Produced	

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Automobiles - 3711 (Continued)								
4-02-016-24	Guide Coating: Waterborne		0.0	0.0	1.5	0.0	Number of Autos Produced	
4-02-016-25	Topcoat: Solvent-Borne		0.0	0.0	30.8	0.0	Number of Autos Produced	
4-02-016-26	Topcoat: Waterborne		0.0	0.0	4.95	0.0	Number of Autos Produced	
Light Duty Trucks - 3713								
4-02-016-27	Prime Coating: Solvent-Borne		0.0	0.0	42.39	0.0	Number of Trucks Produced	
4-02-016-28	Prime Coating: Electro-Deposition		0.0	0.0	0.58	0.0	Number of Trucks Produced	
4-02-016-29	Guide Coating: Solvent-Borne		0.0	0.0	14.04	0.0	Number of Trucks Produced	
4-02-016-30	Guide Coating: Waterborne		0.0	0.0	5.06	0.0	Number of Trucks Produced	
4-02-016-31	Topcoat: Solvent-Borne		0.0	0.0	34.0	0.0	Number of Trucks Produced	
4-02-016-32	Topcoat: Waterborne		0.0	0.0	15.47	0.0	Number of Trucks Produced	
4-02-016-99	Other Not Classified (Specify in Comments)						Tons Solvent in Coating	
Surface Coating of Metal Cans - 3411								
4-02-017-02	Cleaning/Pretreatment		0.0	0.0	*NEG	0.0	Tons Solvent in Coating	293
4-02-017-03	Coating Mixing		0.0	0.0	*200	0.0	Tons Solvent in Coating	293
4-02-017-04	Coating Storage		0.0	0.0	*NEG	0.0	Tons Solvent in Coating	293
4-02-017-05	Equipment Cleanup		0.0	0.0	*200	0.0	Tons Solvent in Coating	293
4-02-017-21	Two Piece and Exterior Base Coating		0.0	0.0	*900	0.0	Tons Solvent in Coating	349
4-02-017-22	Interior Spray Coating		0.0	0.0	*400	0.0	Tons Solvent in Coating	349
4-02-017-23	Sheet Basecoating (Interior)		0.0	0.0	*400	0.0	Tons Solvent in Coating	349
4-02-017-24	Sheet Basecoating (Exterior)		0.0	0.0	*400	0.0	Tons Solvent in Coating	349
4-02-017-25	Side Seam Spray Coating		0.0	0.0	*100	0.0	Tons Solvent in Coating	349
4-02-017-26	End Sealing Compound		0.0	0.0	*100	0.0	Tons Solvent in Coating	349
4-02-017-27	Lithography		0.0	0.0	*2,000	0.0	Tons Solvent in Ink	
4-02-017-28	Over Varnish		0.0	0.0	*200	0.0	Tons Solvent in Coating	349
4-02-017-31	Three-piece Can Sheet Basecoating		0.0	0.0	352,000.0	0.0	Number of Coating Lines	
4-02-017-32	Three-piece Can Sheet Lithographic Coating Line		0.0	0.0	11,000.0	0.0	Number of Coating Lines	
4-02-017-33	Three-piece Beverage Can-Side Seam Spray Coating		0.0	0.0	40,000.0	0.0	Number of Coating Lines	
4-02-017-34	Three-piece Beverage Can Interior Body Spray Coating		0.0	0.0	176,000.0	0.0	Number of Coating Lines	
4-02-017-35	Two-piece Can Coating Line		0.0	0.0	574,000.0	0.0	Number of Coating Lines	
4-02-017-36	Two-piece Can End Sealing Compound		0.0	0.0	30,000.0	0.0	Number of Coating Lines	
4-02-017-99	Other Not Classified (Specify in Comments)		0.0	0.0	*2,000.0^d	0.0	Tons Solvent in Coating	
Surface Coating of Metal Coils - 3353, 3354								
4-02-018-01	Prime Coating Application		0.0	0.0	*800	0.0	Tons Solvent in Coating	293
4-02-018-03	Solvent Mixing		0.0	0.0	*200	0.0	Tons Solvent in Coating	293
4-02-018-04	Solvent Storage		0.0	0.0	*NEG	0.0	Tons Solvent in Coating	293

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO$_x$ Lbs/Unit	NO$_x$ Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Surface Coating of Metal Coils - 3353, 3354 (Continued)								
4-02-018-05	Equipment Cleanup		0.0	0.0	*200	0.0	Tons Solvent in Coating	293
4-02-018-06	Finish Coating Application		0.0	0.0	*800	0.0	Tons Solvent in Coating	293
4-02-018-99	Other Not Classified (Specify in Comments)		0.0	0.0		0.0	Tons Solvent in Coating	
Wood Furniture Surface Coating - 2511, 2512, 2517, 2521								
4-02-019-01	Coating Operation		0.0	0.0	*2,000.0^d	0.0	Tons Solvent in Coating	
4-02-019-03	Coating Mixing		0.0	0.0	*200	0.0	Tons Solvent in Coating	293
4-02-019-04	Coating Storage		0.0	0.0	*NEG	0.0	Tons Solvent in Coating	293
4-02-019-99	Other Not Classified (Specify in Comments)		0.0	0.0		0.0	Tons Solvent in Coating	
Metal Furniture Surface Coating - 2514, 2522								
4-02-020-01	Coating Operation		0.0	0.0	*1,600	0.0	Tons Solvent in Coating	294
4-02-020-02	Cleaning/Pretreatment		0.0	0.0	*NEG	0.0	Tons Solvent in Coating	294
4-02-020-03	Coating Mixing		0.0	0.0	*200	0.0	Tons Solvent in Coating	294
4-02-020-04	Coating Storage		0.0	0.0	*NEG	0.0	Tons Solvent in Coating	294
4-02-020-05	Equipment Cleanup		0.0	0.0	*200	0.0	Tons Solvent in Coating	294
4-02-020-31	Single Sprayline: General				13.1		10^3 Sq. Ft. Product Surface Area Coated	
4-02-020-32	Spray Dip Line: General				15.3		10^3 Sq. Ft. Product Surface Area Coated	
4-02-020-33	Spray High Solids Coating				3.9		10^3 Sq. Ft. Product Surface Area Coated	
4-02-020-34	Spray Water-Borne Coating				2.45		10^3 Sq. Ft. Product Surface Area Coated	
4-02-020-99	Other Not Classified (Specify in Comments)		0.0	0.0		0.0	Tons Solvent in Coating	
Surface Coating of Flat Wood Products - 2435, 2492, 2499								
4-02-021-01	Base Coat		0.0	0.0	*1,500	0.0	Tons Solvent in Coating	293
4-02-021-03	Coating Mix		0.0	0.0	*200	0.0	Tons Solvent in Coating	293
4-02-021-04	Coating Storage		0.0	0.0	*NEG	0.0	Tons Solvent in Coating	293
4-02-021-05	Equipment Cleanup		0.0	0.0	*200	0.0	Tons Solvent in Coating	293
4-02-021-06	Topcoat		0.0	0.0	*1,500	0.0	Tons Solvent in Coating	293
4-02-021-07	Filler		0.0	0.0	*60	0.0	Tons Solvent in Coating	293
4-02-021-08	Sealer		0.0	0.0	*60	0.0	Tons Solvent in Coating	293
4-02-021-09	Inks		0.0	0.0	*2,000.0	0.0	Tons Solvent in Ink	
4-02-021-31	Waterborne Coating		0.0	0.0	2.5	0.0	10^3 Sq. Ft. Product Surface Area	
4-02-021-32	Solvent-borne Coating		0.0	0.0	16.5	0.0	10^3 Sq. Ft. Product Surface Area	

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO$_x$ Lbs/Unit	NO$_x$ Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Surface Coating of Flat Wood Products - 2435, 2492, 2499 (Continued)								
4-02-021-33	Ultraviolet Coating		0.0	0.0	0.8	0.0	10^3 Sq. Ft. Product Surface Area	
4-02-021-99	Other Not Classified (Specify in Comments)		0.0	0.0		0.0	Tons Solvent in Coating	
Surface Coating of Plastics Parts - 3079[d]								
4-02-022-01	Coating Operation		0.0	0.0	*1600.0	0.0	Tons Solvent in Coating	293
4-02-022-02	Cleaning/Pretreatment		0.0	0.0	*NEG	0.0	Tons Solvent in Coating	293
4-02-022-03	Coating Mixing		0.0	0.0	*200	0.0	Tons Solvent in Coating	293
4-02-022-04	Coating Storage		0.0	0.0	*NEG	0.0	Tons Solvent in Coating	293
4-02-022-05	Equipment Cleanup		0.0	0.0	*200	0.0	Tons Solvent in Coating	293
4-02-022-99	Other Not Classified (Specify in Comments)		0.0	0.0		0.0	Tons Solvent in Coating	
Surface Coating of Large Ships - 3731[d]								
4-02-023-01	Prime Coating Operation		0.0	0.0	*800	0.0	Tons Solvent in Coating	293
4-02-023-02	Cleaning/Pretreatment		0.0	0.0	*NEG	0.0	Tons Solvent in Coating	293
4-02-023-03	Coating Mixing		0.0	0.0	*200	0.0	Tons Solvent in Coating	293
4-02-023-04	Coating Storage		0.0	0.0	*NEG	0.0	Tons Solvent in Coating	293
4-02-023-05	Equipment Cleanup		0.0	0.0	*200	0.0	Tons Solvent in Coating	293
4-02-023-06	Topcoat Operation		0.0	0.0	*800	0.0	Tons Solvent in Coating	293
4-02-023-99	Other Not Classified (Specify in Comments)		0.0	0.0		0.0	Tons Solvent in Coating	
Surface Coating of Large Aircraft - 3721[d]								
4-02-024-01	Prime Coating Operation		0.0	0.0	*800	0.0	Tons Solvent in Coating	293
4-02-024-02	Cleaning/Pretreatment		0.0	0.0	*NEG	0.0	Tons Solvent in Coating	293
4-02-024-03	Coating Mixing		0.0	0.0	*200	0.0	Tons Solvent in Coating	293
4-02-024-04	Coating Storage		0.0	0.0	*NEG	0.0	Tons Solvent in Coating	293
4-02-024-05	Equipment Cleanup		0.0	0.0	*200	0.0	Tons Solvent in Coating	293
4-02-024-06	Topcoat Operation		0.0	0.0	*800	0.0	Tons Solvent in Coating	293
4-02-024-99	Other Not Classified (Specify in Comments)		0.0	0.0		0.0	Tons Solvent in Coating	
Surface Coating of Miscellaneous Metal Parts[aaa]								
4-02-025-01	Coating Operation		0.0	0.0	*1600	0.0	Tons Solvent in Coating	293
4-02-025-02	Cleaning/Pretreatment		0.0	0.0	*NEG	0.0	Tons Solvent in Coating	293
4-02-025-03	Coating Mixing		0.0	0.0	*200	0.0	Tons Solvent in Coating	293
4-02-025-04	Coating Storage		0.0	0.0	*NEG	0.0	Tons Solvent in Coating	293
4-02-025-05	Equipment Cleanup		0.0	0.0	*200	0.0	Tons Solvent in Coating	293
4-02-025-31	Conveyor Single Flow		0.0	0.0	15.3	0.0	10^3 Sq. Ft. Product Surface Area	

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Surface Coating of Miscellaneous Metal Parts (Continued)[aaa]								
4-02-025-32	Conveyor Single Dip		0.0	0.0	15.3	0.0	10^3 Sq. Ft. Product Surface Area	
4-02-025-33	Conveyor Single Spray		0.0	0.0	27.5	0.0	10^3 Sq. Ft. Product Surface Area	
4-02-025-34	Conveyor Two Coat Flow and Spray		0.0	0.0	42.8	0.0	10^3 Sq. Ft. Product Surface Area	
4-02-025-35	Conveyor Two Coat, Dip and Spray		0.0	0.0	42.8	0.0	10^3 Sq. Ft. Product Surface Area	
4-02-025-36	Conveyor Two Coat, Spray		0.0	0.0	55.0	0.0	10^3 Sq. Ft. Product Surface Area	
4-02-025-37	Manual Two Coat, Spray and Air Dry		0.0	0.0	34.8	0.0	10^3 Sq. Ft. Product Surface Area	
4-02-025-99	Other Not Classified (Specify in Comments)		0.0	0.0		0.0	Tons Solvent in Coating	
Surface Coating of Steel Drums - 3412								
4-02-026-01	Coating Operation		0.0	0.0	*5.4	0.0	Gallons Paint Consumed	313
4-02-026-02	Cleaning/Pretreatment		0.0	0.0	*NEG	0.0	Gallons Paint Consumed	313
4-02-026-03	Coating Mixing		0.0	0.0	*0.5	0.0	Gallons Paint Consumed	313
4-02-026-04	Coating Storage		0.0	0.0	*NEG	0.0	Gallons Paint Consumed	313
4-02-026-05	Equipment Cleanup		0.0	0.0	*0.5	0.0	Gallons Paint Consumed	313
4-02-026-06	Interior Coating		0.0	0.0	*2	0.0	Gallons Paint Consumed	313
4-02-026-07	Exterior Coating		0.0	0.0	*2	0.0	Gallons Paint Consumed	313
4-02-026-99	Other Not Classified (Specify in Comments)		0.0	0.0		0.0	Gallons Paint Consumed	
Organic Solvent Evaporation - Surface Coating - Fugitive Emissions[f]								
4-02-888-01	Specify in Comments Field						Tons Product	
4-02-888-02	Specify in Comments Field						Tons Product	
4-02-888-03	Specify in Comments Field						Tons Product	
4-02-888-04	Specify in Comments Field						Tons Product	
4-02-888-05	Specify in Comments Field						Tons Product	
Organic Solvent Evaporation - Surface Coating - Fuel Fired Equipment								
Flares								
4-02-900-23	Natural Gas				*5.6		10^6 Cubic Feet Burned	130
Organic Solvent Evaporation - Surface Coating - Miscellaneous								
4-02-999-95	Specify in Comments						Tons Solvent in Coating	
4-02-999-96	Specify in Comments						Tons Solvent	
4-02-999-97	Specify in Comments Field						10^3 Units Produced	
4-02-999-98	Specify in Comments Field						Gallons	

---

[*] Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
PETROLEUM PRODUCT STORAGE (REFINERIES OIL AND GAS FIELDS ONLY) 2911, 2992, 1311, 1321[bbb]								
Fixed Roof Tanks (67,000 BBL. Tank Size)								
4-03-010-01	Gasoline RVP13: Breathing Loss	0.0	0.0	0.0	30.5	0.0	10^3 Gallons Storage Capacity	
4-03-010-02	Gasoline RVP10: Breathing Loss	0.0	0.0	0.0	23.5	0.0	10^3 Gallons Storage Capacity	
4-03-010-03	Gasoline RVP7: Breathing Loss	0.0	0.0	0.0	16.4	0.0	10^3 Gallons Storage Capacity	
4-03-010-10	Crude Oil RVP5: Breathing Loss	0.0	0.0	0.0	5.78	0.0	10^3 Gallons Storage Capacity	
4-03-010-13	Jet Naphtha (JP-4): Breathing Loss	0.0	0.0	0.0	8.8	0.0	10^3 Gallons Storage Capacity	
4-03-010-16	Jet Kerosene: Breathing Loss	0.0	0.0	0.0	0.45	0.0	10^3 Gallons Storage Capacity	
4-03-010-19	Distillate Fuel #2: Breathing Loss	0.0	0.0	0.0	0.39	0.0	10^3 Gallons Storage Capacity	
4-03-010-97	Specify Liquid: Breathing Loss	0.0	0.0	0.0	2.0	0.0	10^3 Gallons Storage Capacity	
Fixed Roof Tanks (250,000 BBL. Tanks Size)								
4-03-010-04	Gasoline RVP13: Breathing Loss	0.0	0.0	0.0	22.5	0.0	10^3 Gallons Storage Capacity	
4-03-010-05	Gasoline RVP10: Breathing Loss	0.0	0.0	0.0	17.4	0.0	10^3 Gallons Storage Capacity	
4-03-010-06	Gasoline RVP7: Breathing Loss	0.0	0.0	0.0	12.3	0.0	10^3 Gallons Storage Capacity	
4-03-010-11	Crude Oil RVP5: Breathing Loss	0.0	0.0	0.0	4.15	0.0	10^3 Gallons Storage Capacity	
4-03-010-14	Jet Naphtha (JP-4): Breathing Loss	0.0	0.0	0.0	6.3	0.0	10^3 Gallons Storage Capacity	
4-03-010-17	Jet Kerosene: Breathing Loss	0.0	0.0	0.0	0.3	0.0	10^3 Gallons Storage Capacity	
4-03-010-20	Distillate Fuel #2: Breathing Loss	0.0	0.0	0.0	0.29	0.0	10^3 Gallons Storage Capacity	
4-03-010-98	Specify Liquid: Breathing Loss	0.0	0.0	0.0	4.8	0.0	10^3 Gallons Storage Capacity	
Fixed Roof Tanks (Independent of Tank Diameter)								
4-03-010-07	Gasoline RVP13: Working Loss	0.0	0.0	0.0	10.0	0.0	10^3 Gallons Throughput	
4-03-010-08	Gasoline RVP10: Working Loss	0.0	0.0	0.0	8.2	0.0	10^3 Gallons Throughput	
4-03-010-09	Gasoline RVP7: Working Loss	0.0	0.0	0.0	5.7	0.0	10^3 Gallons Throughput	
4-03-010-12	Crude Oil RVP5: Working Loss	0.0	0.0	0.0	2.47	0.0	10^3 Gallons Throughput	
4-03-010-15	Jet Naphtha (JP-4): Working Loss	0.0	0.0	0.0	2.5	0.0	10^3 Gallons Throughput	
4-03-010-18	Jet Kerosene: Working Loss	0.0	0.0	0.0	0.03	0.0	10^3 Gallons Throughput	

SCC	Process	PART Lbs/Unit	SO$_x$ Lbs/Unit	NO$_x$ Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Fixed Roof Tanks (Independent of Tank Diameter) (Continued)								
4-03-010-21	Distillate Fuel #2: Working Loss	0.0	0.0	0.0	0.02	0.0	10^3 Gallons Throughput	
4-03-010-99	Specify Liquid: Working Loss	0.0	0.0	0.0		0.0	10^3 Gallons Throughput	
Floating Roof Tanks (67,000 BBL. Tank Size)								
4-03-011-01	Gasoline RVP13: Standing Loss	0.0	0.0	0.0	18.2	0.0	10^3 Gallons Storage Capacity	
4-03-011-02	Gasoline RVP10: Standing Loss	0.0	0.0	0.0	13.4	0.0	10^3 Gallons Storage Capacity	
4-03-011-03	Gasoline RVP7: Standing Loss	0.0	0.0	0.0	8.6	0.0	10^3 Gallons Storage Capacity	
4-03-011-09	Crude Oil RVP5: Standing Loss	0.0	0.0	0.0	1.76	0.0	10^3 Gallons Storage Capacity	
4-03-011-11	Jet Naphtha (JP-4): Standing Loss	0.0	0.0	0.0	3.5	0.0	10^3 Gallons Storage Capacity	
4-03-011-13	Jet Kerosene: Standing Loss	0.0	0.0	0.0	0.035	0.0	10^3 Gallons Storage Capacity	
4-03-011-15	Distillate Fuel #2: Standing Loss	0.0	0.0	0.0	0.026	0.0	10^3 Gallons Storage Capacity	
4-03-011-98	Specify Liquid: Standing Loss	0.0	0.0	0.0		0.0	10^3 Gallons Storage Capacity	
Floating Roof Tanks (250,000 BBL. Tank Size)								
4-03-011-04	Gasoline RVP13: Standing Loss	0.0	0.0	0.0	8.9	0.0	10^3 Gallons Storage Capacity	
4-03-011-05	Gasoline RVP10: Standing Loss	0.0	0.0	0.0	6.5	0.0	10^3 Gallons Storage Capacity	
4-03-011-06	Gasoline RVP7: Standing Loss	0.0	0.0	0.0	4.2	0.0	10^3 Gallons Storage Capacity	
4-03-011-10	Crude Oil RVP5: Standing Loss	0.0	0.0	0.0	0.89	0.0	10^3 Gallons Storage Capacity	
4-03-011-12	Jet Naphtha (JP-4): Standing Loss	0.0	0.0	0.0	1.7	0.0	10^3 Gallons Storage Capacity	
4-03-011-14	Jet Kerosene: Standing Loss	0.0	0.0	0.0	0.017	0.0	10^3 Gallons Storage Capacity	
4-03-011-16	Distillate Fuel #2: Standing Loss	0.0	0.0	0.0	0.013	0.0	10^3 Gallons Storage Capacity	
4-03-011-99	Specify Liquid: Standing Loss	0.0	0.0	0.0		0.0	10^3 Gallons Storage Capacity	
Floating Roof Tanks (Withdrawal Loss)								
4-03-011-07	Gasoline RVP13/RVP10/RVP7	0.0	0.0	0.0	0.0019	0.0	10^3 Gallons Throughput	
4-03-011-08	Gasoline RVP13/RVP10/RVP7	0.0	0.0	0.0	0.001	0.0	10^3 Gallons Throughput	
4-03-011-17	Crude Oil	0.0	0.0	0.0	*0.007	0.0	10^3 Gallons Throughput	3
4-03-011-18	Jet Naphtha (JP-4)	0.0	0.0	0.0	*0.056	0.0	10^3 Gallons Throughput	63

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Floating Roof Tanks (Withdrawal Loss) (Continued)								
4-03-011-19	Jet Kerosene	0.0	0.0	0.0		0.0	10^3 Gallons Throughput	
4-03-011-20	Distillate Fuel #2	0.0	0.0	0.0	*0.0002	0.0	10^3 Gallons Throughput	150
4-03-011-97	Specify Liquid	0.0	0.0	0.0		0.0	10^3 Gallons Throughput	
Tanks with External Floating Roof - Primary Seal								
4-03-011-30	Specify Liquid: Standing Loss	0.0	0.0	0.0		0.0	10^3 Gallons Storage Capacity	
4-03-011-31	Gasoline: Standing Loss	0.0	0.0	0.0	*14.5	0.0	10^3 Gallons Storage Capacity	315
4-03-011-32	Crude Oil: Standing Loss	0.0	0.0	0.0	*1.6	0.0	10^3 Gallons Storage Capacity	315
4-03-011-33	Jet Naphtha (JP-4): Standing Loss	0.0	0.0	0.0	*2.7	0.0	10^3 Gallons Storage Capacity	315
4-03-011-34	Jet Kerosene: Standing Loss	0.0	0.0	0.0	*0.3	0.0	10^3 Gallons Storage Capacity	315
4-03-011-35	Distillate Fuel #2: Standing Loss	0.0	0.0	0.0	*0.2	0.0	10^3 Gallons Storage Capacity	315
Tanks with External Floating Roof - Secondary Seal								
4-03-011-40	Specify Liquid: Standing Loss	0.0	0.0	0.0		0.0	10^3 Gallons Storage Capacity	
4-03-011-41	Gasoline: Standing Loss	0.0	0.0	0.0	*0.8	0.0	10^3 Gallons Storage Capacity	315
4-03-011-42	Crude Oil: Standing Loss	0.0	0.0	0.0	*0.08	0.0	10^3 Gallons Storage Capacity	315
4-03-011-43	Jet Naphtha (JP-4): Standing Loss	0.0	0.0	0.0	*0.1	0.0	10^3 Gallons Storage Capacity	315
4-03-011-44	Jet Kerosene: Standing Loss	0.0	0.0	0.0	*0.002	0.0	10^3 Gallons Storage Capacity	315
4-03-011-45	Distillate Fuel #2: Standing Loss	0.0	0.0	0.0	*0.001	0.0	10^3 Gallons Storage Capacity	315
Tanks with Internal Floating Roofs								
4-03-011-50	Specify Liquid: Standing Loss	0.0	0.0	0.0	*0.18	0.0	10^3 Gallons Storage Capacity	143
4-03-011-51	Gasoline: Standing Loss	0.0	0.0	0.0	*0.18	0.0	10^3 Gallons Storage Capacity	315
4-03-011-52	Crude Oil: Standing Loss	0.0	0.0	0.0	*0.02	0.0	10^3 Gallons Storage Capacity	315
4-03-011-53	Jet Naphtha (JP-4): Standing Loss	0.0	0.0	0.0	*0.03	0.0	10^3 Gallons Storage Capacity	315
4-03-011-54	Jet Kerosene: Standing Loss	0.0	0.0	0.0	*0.02	0.0	10^3 Gallons Storage Capacity	315
4-03-011-55	Distillate Fuel #2: Standing Loss	0.0	0.0	0.0	*0.02	0.0	10^3 Gallons Storage Capacity	315

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Variable Vapor Space Tanks - (10,500 BBL. Tank Size)								
4-03-012-01	Gasoline RVP13: Filling Loss	0.0	0.0	0.0	9.6	0.0	10^3 Gallons Throughput	
4-03-012-02	Gasoline RVP10: Filling Loss	0.0	0.0	0.0	7.7	0.0	10^3 Gallons Throughput	
4-03-012-03	Gasoline RVP7: Filling Loss	0.0	0.0	0.0	5.4	0.0	10^3 Gallons Throughput	
4-03-012-04	Jet Naphtha (JP-4): Filling Loss	0.0	0.0	0.0	2.3	0.0	10^3 Gallons Throughput	
4-03-012-05	Jet Kerosene: Filling Loss	0.0	0.0	0.0	0.025	0.0	10^3 Gallons Throughput	
4-03-012-06	Distillate Fuel #2: Filling Loss	0.0	0.0	0.0	0.022	0.0	10^3 Gallons Throughput	
4-03-012-07	Benzene: Filling Loss	0.0	0.0	0.0	*0.003	0.0	10^3 Gallons Throughput	73
4-03-012-99	Specify Liquid: Filling Loss	0.0	0.0	0.0		0.0	10^3 Gallons Throughput	
Petroleum Storage Tanks - Fugitive Emissions[f]								
4-03-888-01	Specify in Comments Field						10^3 Gallons Storage Capacity	
4-03-888-02	Specify in Comments Field						10^3 Gallons Storage Capacity	
4-03-888-03	Specify in Comments Field						10^3 Gallons Storage Capacity	
4-03-888-04	Specify in Comments Field						10^3 Gallons Storage Capacity	
4-03-888-05	Specify in Comments Field						10^3 Gallons Storage Capacity	
BULK TERMINALS - PETROLEUM STORAGE TANKS - MAJOR GROUPS 51 AND 42[bbb, ccc]								
Fixed Roof Tanks (67,000 BBL. Tank Size) - 5171, 4226								
4-04-001-01	Gasoline RVP13: Breathing Loss	0.0	0.0	0.0	30.5	0.0	10^3 Gallons Storage Capacity	
4-04-001-02	Gasoline RVP10: Breathing Loss	0.0	0.0	0.0	23.5	0.0	10^3 Gallons Storage Capacity	
4-04-001-03	Gasoline RVP7: Breathing Loss	0.0	0.0	0.0	16.4	0.0	10^3 Gallons Storage Capacity	
4-04-001-04	Gasoline RVP13: Breathing Loss	0.0	0.0	0.0	22.5	0.0	10^3 Gallons Storage Capacity	
4-04-001-05	Gasoline RVP10: Breathing Loss	0.0	0.0	0.0	17.4	0.0	10^3 Gallons Storage Capacity	
4-04-001-06	Gasoline RVP7: Breathing Loss	0.0	0.0	0.0	12.3	0.0	10^3 Gallons Storage Capacity	
Fixed Roof Tanks (Independent of Tank Diameter) - 5171, 4226								
4-04-001-07	Gasoline RVP13: Working Loss	0.0	0.0	0.0	10.0	0.0	10^3 Gallons Storage Capacity	
4-04-001-08	Gasoline RVP10: Working Loss	0.0	0.0	0.0	8.2	0.0	10^3 Gallons Storage Capacity	
4-04-001-09	Gasoline RVP7: Working Loss	0.0	0.0	0.0	5.7	0.0	10^3 Gallons Storage Capacity	

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process *	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Floating Roof Tanks (67,000 BBL. Tank Size) - 5171, 4226								
4-04-001-10	Gasoline RVP13: Standing Loss	0.0	0.0	0.0	18.2	0.0	10^3 Gallons Storage Capacity	
4-04-001-11	Gasoline RVP10: Standing Loss	0.0	0.0	0.0	13.4	0.0	10^3 Gallons Storage Capacity	
4-04-001-12	Gasoline RVP7: Standing Loss	0.0	0.0	0.0	8.6	0.0	10^3 Gallons Storage Capacity	
4-04-001-16	Gasoline RVP13/10/7: Withdrawal Loss	0.0	0.0	0.0	0.002	0.0	10^3 Gallons Storage Capacity	
Floating Roof Tanks (250,000 BBL. Tank Size) - 5171, 4226								
4-04-001-13	Gasoline RVP13: Standing Loss	0.0	0.0	0.0	8.9	0.0	10^3 Gallons Storage Capacity	
4-04-001-14	Gasoline RVP10: Standing Loss	0.0	0.0	0.0	6.5	0.0	10^3 Gallons Storage Capacity	
4-04-001-15	Gasoline RVP7: Standing Loss	0.0	0.0	0.0	4.2	0.0	10^3 Gallons Storage Capacity	
4-04-001-17	Gasoline RVP13/10/7: Withdrawal Loss	0.0	0.0	0.0	0.001	0.0	10^3 Gallons Throughput	
Variable Vapor Space - (10,500 BBL. Tank Size) - 5171, 4226								
4-04-001-18	Gasoline RVP13: Filling Loss	0.0	0.0	0.0	9.6	0.0	10^3 Gallons Throughput	
4-04-001-19	Gasoline RVP10: Filling Loss	0.0	0.0	0.0	7.7	0.0	10^3 Gallons Throughput	
4-04-001-20	Gasoline RVP7: Filling Loss	0.0	0.0	0.0	5.4	0.0	10^3 Gallons Throughput	
Miscellaneous Losses/Leaks - 5171, 4226								
4-04-001-51	Valves, Flanges and Pumps	0.0	0.0	0.0	*0.3	0.0	10^3 Gallons Transferred	289
4-04-001-52	Vapor Collection Losses	0.0	0.0	0.0		0.0	10^3 Gallons Transferred	
4-04-001-53	Vapor Control Unit Losses	0.0	0.0	0.0	*4.8	0.0	10^3 Gallons Transferred	143
4-04-001-54	Tank Truck Vapor Leaks	0.0	0.0	0.0		0.0	10^3 Gallons Transferred	
BULK PLANTS - PETROLEUM STORAGE TANKS - MAJOR GROUPS 13, 42, 51[bbb, ddd]								
Fixed Roof Tanks (67,000 BBL. Tank Size) - 5171, 4226								
4-04-002-01	Gasoline RVP13: Breathing Loss	0.0	0.0	0.0	30.5	0.0	10^3 Gallons Storage Capacity	
4-04-002-02	Gasoline RVP10: Breathing Loss	0.0	0.0	0.0	23.5	0.0	10^3 Gallons Storage Capacity	
4-04-002-03	Gasoline RVP7: Breathing Loss	0.0	0.0	0.0	*15	0.0	10^3 Gallons Storage Capacity	331
4-04-002-04	Gasoline RVP13: Working Loss	0.0	0.0	0.0	10.0	0.0	10^3 Gallons Throughput	
4-04-002-05	Gasoline RVP10: Working Loss	0.0	0.0	0.0	8.2	0.0	10^3 Gallons Throughput	
4-04-002-06	Gasoline RVP7: Working Loss	0.0	0.0	0.0	5.7	0.0	10^3 Gallons Throughput	

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Floating Roof Tanks (67,000 BBL. Tank Size) - 5171, 4226								
4-04-002-07	Gasoline RVP13: Standing Loss	0.0	0.0	0.0	18.2	0.0	10^3 Gallons Storage Capacity	
4-04-002-08	Gasoline RVP10: Standing Loss	0.0	0.0	0.0	13.4	0.0	10^3 Gallons Storage Capacity	
4-04-002-09	Gasoline RVP7: Standing Loss	0.0	0.0	0.0	8.6	0.0	10^3 Gallons Storage Capacity	
4-04-002-10	Gasoline RVP13/10/7: Withdrawal Loss	0.0	0.0	0.0	0.0019	0.0	10^3 Gallons Throughput	
Variable Vapor Space Tanks - (10,500 BBL. Tank) - 5171, 4226								
4-04-002-11	Gasoline RVP13: Filling Loss	0.0	0.0	0.0	9.6	0.0	10^3 Gallons Throughput	
4-04-002-12	Gasoline RVP10: Filling Loss	0.0	0.0	0.0	7.7	0.0	10^3 Gallons Throughput	
4-04-002-13	Gasoline RVP7: Filling Loss	0.0	0.0	0.0	5.4	0.0	10^3 Gallons Throughput	
Miscellaneous Losses/Leaks - 5171, 4226								
4-04-002-50	Loading Racks	0.0	0.0	0.0	*0.7	0.0	10^3 Gallons Transferred	7
4-04-002-51	Valves, Flanges and Pumps	0.0	0.0	0.0	*0.025	0.0	10^3 Gallons Transferred	3
4-04-002-54	Tank Truck Vapor Losses	0.0	0.0	0.0		0.0	10^3 Gallons Transferred	
Oil Field Storage of Crude Oil - 1311								
4-04-003-01	Fixed Roof Tank: Breathing Loss	0.0	0.0	0.0	*28	0.0	10^3 Gallons Storage Capacity	71
4-04-003-02	Fixed Roof Tank: Working Loss	0.0	0.0	0.0	*7.2	0.0	10^3 Gallons Throughput	63
4-04-003-03	External Floating Roof Tank with Primary Seals: Standing Loss	0.0	0.0	0.0	*1.6	0.0	10^3 Gallons Storage Capacity	334
4-04-003-04	External Floating Roof Tank with Secondary Seals: Standing Loss	0.0	0.0	0.0	*0.08	0.0	10^3 Gallons Storage Capacity	334
4-04-003-05	Internal Floating Roof Tank: Standing Loss	0.0	0.0	0.0	*0.02	0.0	10^3 Gallons Storage Capacity	334
Petroleum Product Storage - Underground Tanks - 5171, 4226								
4-04-004-01	Gasoline RVP13: Breathing Loss	0.0	0.0	0.0	*NEG	0.0	10^3 Gallons Storage Capacity	215
4-04-004-02	Gasoline RVP13: Working Loss	0.0	0.0	0.0	*14.7	0.0	10^3 Gallons Throughput	215
4-04-004-03	Gasoline RVP10: Breathing Loss	0.0	0.0	0.0	*NEG	0.0	10^3 Gallons Storage Capacity	215
4-04-004-04	Gasoline RVP10: Working Loss	0.0	0.0	0.0	*11.9	0.0	10^3 Gallons Throughput	215
4-04-004-05	Gasoline RVP7: Breathing Loss	0.0	0.0	0.0	*NEG	0.0	10^3 Gallons Storage Capacity	215
4-04-004-06	Gasoline RVP7: Working Loss	0.0	0.0	0.0	*8.3	0.0	10^3 Gallons Throughput	215
4-04-004-07	Crude Oil RVP5: Breathing Loss	0.0	0.0	0.0	*NEG	0.0	10^3 Gallons Storage Capacity	215
4-04-004-08	Crude Oil RVP5: Working Loss	0.0	0.0	0.0	*4.9	0.0	10^3 Gallons Throughput	215

---

[*] Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Petroleum Product Storage - Underground Tanks - 5171, 4226 (Continued)								
4-04-004-09	Jet Naphtha JP-4: Breathing Loss	0.0	0.0	0.0	*NEG	0.0	10^3 Gallons Storage Capacity	215
4-04-004-10	Jet Naphtha JP-4: Working Loss	0.0	0.0	0.0	*3.6	0.0	10^3 Gallons Throughput	215
4-04-004-11	Jet Kerosene: Breathing Loss	0.0	0.0	0.0	*NEG	0.0	10^3 Gallons Storage Capacity	215
4-04-004-12	Jet Kerosene: Working Loss	0.0	0.0	0.0	*0.04	0.0	10^3 Gallons Throughput	215
4-04-004-13	Distillate Fuel #2: Breathing Loss	0.0	0.0	0.0	*NEG	0.0	10^3 Gallons Storage Capacity	215
4-04-004-14	Distillate Fuel #2: Working Loss	0.0	0.0	0.0	*0.03	0.0	10^3 Gallons Throughput	215
4-04-004-97	Specify Liquid: Breathing Loss	0.0	0.0	0.0		0.0	10^3 Gallons Storage Capacity	
4-04-004-98	Specify Liquid: Working Loss	0.0	0.0	0.0		0.0	10^3 Gallons Throughput	
PRINTING/PUBLISHING - PRINTING PROCESS - MAJOR GROUP 27								
Dryers - 2711 through 2782								
4-05-001-01	Dryer		*150 S	*32	*2000.0^d		Tons Solvent in Ink	74, 291
4-05-001-99	Dryer						Gallons Ink	
Printing - 2751, 2752, 2754								
4-05-002-01	Letter Press - 2751	0.0	0.0	0.0	420.0	0.0	Tons Ink	
4-05-002-11	Letter Press - 2751	0.0	0.0	0.0	1200.0	0.0	Tons Solvent in Ink	
4-05-002-12	Letter Press - 2751	0.0	0.0	0.0	1.5	0.0	Gallons Ink	
4-05-003-01	Flexographic - 2751	0.0	0.0	0.0	1240.0	0.0	Tons Ink	
4-05-003-11	Flexographic - 2751	0.0	0.0	0.0	1910.0	0.0	Tons Solvent in Ink	
4-05-003-12	Flexographic - 2751	0.0	0.0	0.0	4.4	0.0	Gallons Ink	
4-05-004-01	Lithographic - 2752	0.0	0.0	0.0	350.0	0.0	Tons Ink	
4-05-004-11	Lithographic - 2752	0.0	0.0	0.0	1000.0	0.0	Tons Solvent in Ink	
4-05-004-12	Lithographic - 2752	0.0	0.0	0.0	1.24	0.0	Gallons Ink	
4-05-004-13	Lithographic-Isopropyl Alcohol Cleanup	0.0	0.0	0.0	2000.0	0.0	Tons Solvent Used	
4-05-005-01	Gravure - 2754	0.0	0.0	0.0	1240.0	0.0	Tons Ink	
4-05-005-11	Gravure - 2754	0.0	0.0	0.0	1910.0	0.0	Tons Solvent in Ink	
4-05-005-12	Gravure - 2754	0.0	0.0	0.0	4.4	0.0	Gallons Ink	
4-05-005-13	Gravure: Publication Printing - 2754	0.0	0.0	0.0	12.4	0.0	Gallons Ink	
4-05-006-01	Ink Mixing: General	0.0	0.0	0.0	*2000.0^d	0.0	Tons Solvent in Ink	
4-05-007-01	Solvent Storage: General	0.0	0.0	0.0	*2000.0^d	0.0	Tons Solvent Stored	
Ink Thinning Solvents - 2700-2799^{eee}								
4-05-003-02	Carbitol	0.0	0.0	0.0	*2000.0^d	0.0	Tons Solvent Added	
4-05-003-03	Cellosolve	0.0	0.0	0.0	*2000.0^d	0.0	Tons Solvent Added	
4-05-005-02	Dimethylformamide	0.0	0.0	0.0	*2000.0^d	0.0	Tons Solvent Added	
4-05-005-03	Ethyl Acetate	0.0	0.0	0.0	*2000.0^d	0.0	Tons Solvent Added	
4-05-003-04	Ethyl Alcohol	0.0	0.0	0.0	*2000.0^d	0.0	Tons Solvent Added	

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Ink Thinning Solvents - 2700-2799 (Continued)***								
4-05-003-05	Isopropyl Alcohol	0.0	0.0	0.0	*2000.0[d]	0.0	Tons Solvent Added	
4-05-002-02	Kerosene	0.0	0.0	0.0	*2000.0[d]	0.0	Tons Solvent Added	
4-05-005-06	Methyl Ethyl Ketone	0.0	0.0	0.0	*2000.0[d]	0.0	Tons Solvent Added	
4-05-005-07	Methyl Isobutyl Ketone	0.0	0.0	0.0	*2000.0[d]	0.0	Tons Solvent Added	
4-05-002-03	Mineral Spirits	0.0	0.0	0.0	*2000.0[d]	0.0	Tons Solvent Added	
4-05-003-07	Naphtha	0.0	0.0	0.0	*2000.0[d]	0.0	Tons Solvent Added	
4-05-003-06	N-Propyl Alcohol	0.0	0.0	0.0	*2000.0[d]	0.0	Tons Solvent Added	
4-05-005-10	Toluene	0.0	0.0	0.0	*2000.0[d]	0.0	Tons Solvent Added	
4-05-005-98	Other Not Classified (Specify in Comments)	0.0	0.0	0.0		0.0	10^3 Gallons Solvent	
4-05-005-99	Other Not Classified (Specify in Comments)	0.0	0.0	0.0		0.0	Tons Solvent Added	
Printing/Publishing - Fugitive Emissions[f]								
4-05-888-01	Specify in Comments Field#						Process Unit-Year	
4-05-888-02	Specify in Comments Field#						Process Unit-Year	
4-05-888-03	Specify in Comments Field#						Process Unit-Year	
4-05-888-04	Specify in Comments Field#						Process Unit-Year	
4-05-888-05	Specify in Comments Field#						Process Unit-Year	
TRANSPORTATION AND MARKETING OF PETROLEUM PRODUCTS - MAJOR GROUPS 44, 45, 51								
Tank Cars and Trucks - Normal Service - 5161, 5171, 5172, 4582								
4-06-001-31	Gasoline-Submerged Loading	0.0	0.0	0.0	5.0	0.0	10^3 Gallons Transferred	
4-06-001-32	Crude Oil-Submerged Loading	0.0	0.0	0.0	2.8	0.0	10^3 Gallons Transferred	
4-06-001-33	Jet Naphtha (JP-4)-Submerged Loading	0.0	0.0	0.0	1.5	0.0	10^3 Gallons Transferred	
4-06-001-34	Jet Kerosene-Submerged Loading	0.0	0.0	0.0	0.02	0.0	10^3 Gallons Transferred	
4-06-001-35	Distillate Oil #2-Submerged Loading	0.0	0.0	0.0	0.01	0.0	10^3 Gallons Transferred	
4-06-001-36	Gasoline-Splash Loading	0.0	0.0	0.0	12.0	0.0	10^3 Gallons Transferred	
4-06-001-37	Crude Oil-Splash Loading	0.0	0.0	0.0	6.6	0.0	10^3 Gallons Transferred	
4-06-001-38	Jet Naphtha-Splash Loading	0.0	0.0	0.0	4.0	0.0	10^3 Gallons Transferred	
4-06-001-39	Jet Kerosene-Splash Loading	0.0	0.0	0.0	0.04	0.0	10^3 Gallons Transferred	
4-06-001-40	Distillate Oil #2-Splash Loading	0.0	0.0	0.0	0.03	0.0	10^3 Gallons Transferred	
Tank Cars and Trucks - Balance Service - 5161, 5171, 5172, 4582								
4-06-001-41	Gasoline-Submerged Loading	0.0	0.0	0.0	8.0	0.0	10^3 Gallons Transferred	
4-06-001-42	Crude Oil-Submerged Loading	0.0	0.0	0.0	4.7	0.0	10^3 Gallons Transferred	
4-06-001-43	Jet Naphtha-Submerged Loading	0.0	0.0	0.0	2.5	0.0	10^3 Gallons Transferred	
4-06-001-44	Gasoline-Splash Loading	0.0	0.0	0.0	8.0	0.0	10^3 Gallons Transferred	
4-06-001-45	Crude Oil-Splash Loading	0.0	0.0	0.0	4.7	0.0	10^3 Gallons Transferred	
4-06-001-46	Jet Naphtha-Splash Loading	0.0	0.0	0.0	2.5	0.0	10^3 Gallons Transferred	

[#] Note that fugitive emissions are reported in units of lbs/process unit-year rather than lbs/ton product as in the NEDS Source Classification Codes and Emission Factor Listing dated October 1985.

[*] Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO$_x$ Lbs/Unit	NO$_x$ Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Tank Cars and Trucks - Clean Tanks - 5161, 5171, 5172, 4582								
4-06-001-47	Gasoline-Submerged Loading	0.0	0.0	0.0	4.0	0.0	10^3 Gallons Transferred	
4-06-001-48	Crude Oil-Submerged Loading	0.0	0.0	0.0	2.4	0.0	10^3 Gallons Transferred	
4-06-001-49	Jet Naphtha (JP-4)-Submerged Loading	0.0	0.0	0.0	1.25	0.0	10^3 Gallons Transferred	
4-06-001-60	Jet Kerosene-Submerged Loading	0.0	0.0	0.0	0.02	0.0	10^3 Gallons Transferred	
4-06-001-61	Distillate Oil #2-Submerged Loading	0.0	0.0	0.0	0.008	0.0	10^3 Gallons Transferred	
Tank Cars and Trucks - Transmit Losses - 5161, 5171, 5172, 4582								
4-06-001-62	Gasoline-Loaded with Fuel	0.0	0.0	0.0	0.005	0.0	10^3 Gallons Transferred	
4-06-001-63	Gasoline-Return with Vapor	0.0	0.0	0.0	0.055	0.0	10^3 Gallons Transferred	
Marine Vessels - 4463								
4-06-002-31	Gasoline-Ship Loading-Cleaned and Vapor-free Tank	0.0	0.0	0.0	1.0	0.0	10^3 Gallons Transferred	
4-06-002-32	Gasoline-Ocean Barges Loading	0.0	0.0	0.0	1.3	0.0	10^3 Gallons Transferred	
4-06-002-33	Gasoline-Barges Loading-Cleaned and Vapor-free Tank	0.0	0.0	0.0	1.2	0.0	10^3 Gallons Transferred	
4-06-022-34	Gasoline-Ship Loading-Ballasted Tank	0.0	0.0	0.0	1.6	0.0	10^3 Gallons Transferred	
4-06-002-35	Gasoline-Ocean Barges Loading-Ballasted Tank	0.0	0.0	0.0	2.1	0.0	10^3 Gallons Transferred	
4-06-002-36	Gasoline-Ship Loading-Uncleaned Tank	0.0	0.0	0.0	2.4	0.0	10^3 Gallons Transferred	
4-06-002-37	Gasoline-Ocean Barges Loading-Uncleaned Tank	0.0	0.0	0.0	3.3	0.0	10^3 Gallons Transferred	
4-06-002-38	Gasoline-Barges Loading-Uncleaned Tank	0.0	0.0	0.0	4.0	0.0	10^3 Gallons Transferred	
4-06-002-39	Gasoline-Tanker-Ballasting Tank Condition	0.0	0.0	0.0	1.4	0.0	10^3 Gallons Transferred	
4-06-002-40	Gasoline-Barges Loading-Average Tank Condition	0.0	0.0	0.0	4.0	0.0	10^3 Gallons Transferred	
4-06-002-41	Gasoline-Tanker-Ballasting	0.0	0.0	0.0	0.8	0.0	10^3 Gallons Transferred	
4-06-002-42	Gasoline-Transit	0.0	0.0	0.0	156.0	0.0	10^3 Gallons Transferred	
4-06-002-43	Crude Oil-Loading Tankers	0.0	0.0	0.0	0.68	0.0	10^3 Gallons Transferred	
4-06-002-44	Jet Fuel-Loading Tankers	0.0	0.0	0.0	0.5	0.0	10^3 Gallons Transferred	
4-06-002-45	Kerosene-Loading Tankers	0.0	0.0	0.0	0.005	0.0	10^3 Gallons Transferred	
4-06-002-46	Distillate Oil No. 2 Loading	0.0	0.0	0.0	0.005	0.0	10^3 Gallons Transferred	
4-06-002-48	Crude Oil-Loading Barges	0.0	0.0	0.0	1.6	0.0	10^3 Gallons Transferred	
4-06-002-49	Jet Fuel-Loading Barges	0.0	0.0	0.0	1.2	0.0	10^3 Gallons Transferred	
4-06-002-50	Kerosene-Loading Barges	0.0	0.0	0.0	0.013	0.0	10^3 Gallons Transferred	
4-06-002-51	Distillate Oil No. 2-Loading Tankers	0.0	0.0	0.0	0.012	0.0	10^3 Gallons Transferred	

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Marine Vessels - 4463 (Continued)								
4-06-002-53	Crude Oil-Tanker Ballasting	0.0	0.0	0.0	0.57	0.0	10^3 Gallons Total Cargo Capacity	
4-06-002-54	Crude Oil-Transit-Loss	0.0	0.0	0.0	49.0	0.0	10^3 Gallons Total Cargo Capacity	
4-06-002-55	Jet Fuel-Transit Loss	0.0	0.0	0.0	36.4	0.0	10^3 Gallons Total Cargo Capacity	
4-06-002-56	Kerosene-Transit-Loss	0.0	0.0	0.0	0.26	0.0	10^3 Gallons Total Cargo Capacity	
4-06-002-57	Distillate Oil No. 2-Transit-Loss	0.0	0.0	0.0	0.26	0.0	10^3 Gallons Total Cargo Capacity	
4-06-002-59	Tanker/Barge Cleaning	0.0	0.0	0.0		0.0	10^3 Gallons Cargo Capacity Cleaned	
Gasoline Retail Operations - 5541								
4-06-003-01	Splash Filling	0.0	0.0	0.0	11.5	0.0	10^3 Gallons Transferred	
4-06-003-02	Submerged Filling without Control	0.0	0.0	0.0	7.3	0.0	10^3 Gallons Transferred	
4-06-003-06	Balanced Submerged Filling	0.0	0.0	0.0	0.3	0.0	10^3 Gallons Throughput	
4-06-003-07	Underground Tank Breathing	0.0	0.0	0.0	1.0	0.0	10^3 Gallons Throughput	
Filling Vehicle Gas Tanks - 5541								
4-06-004-01	Vapor Loss: without Controls	0.0	0.0	0.0	11.0	0.0	10^3 Gallons Pumped	
4-06-004-02	Liquid Spill Loss: without Controls	0.0	0.0	0.0	0.67	0.0	10^3 Gallons Pumped	
4-06-004-03	Vapor Loss: without Controls	0.0	0.0	0.0	0.9	0.0	10^3 Gallons Transferred	
Petroleum Marketing - Fugitive Emissions[f]								
4-06-888-01	Specify in Comments Field#						Process Unit-Year	
4-06-888-02	Specify in Comments Field#						Process Unit-Year	
4-06-888-03	Specify in Comments Field#						Process Unit-Year	
4-06-888-04	Specify in Comments Field#						Process Unit-Year	
4-06-888-05	Specify in Comments Field#						Process Unit-Year	
ORGANIC CHEMICAL STORAGE - FIXED ROOF TANKS - MAJOR GROUPS 28, 29, 30, 51								
Acid Anhydrides								
4-07-004-01	Acetic Anhydride: Breathing Loss	0.0	0.0	0.0	*1.1	0.0	10^3 Gallons Storage Capacity	73
4-07-004-02	Acetic Anhydride: Working Loss	0.0	0.0	0.0	*0.13	0.0	10^3 Gallons Throughput	73
4-07-004-97	Specify Liquid: Breathing Loss	0.0	0.0	0.0		0.0	10^3 Gallons Storage Capacity	
4-07-004-98	Specify Liquid: Working Loss	0.0	0.0	0.0		0.0	10^3 Gallons Throughput	

#Note that fugitive emissions are reported in units of lbs/process unit-year rather than lbs/10^3 gallons throughput as in the NEDS Source Classification Codes and Emission Factor Listing dated October 1985.

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Alcohols								
4-07-008-01	N-Butyl Alcohol: Breathing Loss	0.0	0.0	0.0	*0.73	0.0	10^3 Gallons Storage Capacity	73
4-07-008-02	N-Butyl Alcohol: Working Loss	0.0	0.0	0.0	*0.01	0.0	10^3 Gallons Throughput	73
4-07-008-03	Sec-Butyl Alcohol: Breathing Loss	0.0	0.0	0.0	*2.2	0.0	10^3 Gallons Storage Capacity	73
4-07-008-04	Sec-Butyl Alcohol: Working Loss	0.0	0.0	0.0	*0.32	0.0	10^3 Gallons Throughput	73
4-07-008-05	Tert-Butyl Alcohol: Breathing Loss	0.0	0.0	0.0	*3.6	0.0	10^3 Gallons Storage Capacity	73
4-07-008-06	Tert-Butyl Alcohol: Working Loss	0.0	0.0	0.0	*0.76	0.0	10^3 Gallons Throughput	73
4-07-008-07	Cyclohexanol: Breathing Loss	0.0	0.0	0.0	*0.73	0.0	10^3 Gallons Storage Capacity	73
4-07-008-08	Cyclohexanol: Working Loss	0.0	0.0	0.0	*0.046	0.0	10^3 Gallons Throughput	73
4-07-008-09	Ethyl Alcohol: Breathing Loss	0.0	0.0	0.0	*2.9	0.0	10^3 Gallons Storage Capacity	73
4-07-008-10	Ethyl Alcohol: Working Loss	0.0	0.0	0.0	*0.66	0.0	10^3 Gallons Throughput	73
4-07-008-11	Isobutyl Alcohol: Breathing Loss	0.0	0.0	0.0	*1.5	0.0	10^3 Gallons Storage Capacity	73
4-07-008-12	Isobutyl Alcohol: Working Loss	0.0	0.0	0.0	*0.17	0.0	10^3 Gallons Throughput	73
4-07-008-13	Isobutyl Alcohol: Breathing Loss	0.0	0.0	0.0	*3.6	0.0	10^3 Gallons Storage Capacity	73
4-07-008-14	Isopropyl Alcohol: Working Loss	0.0	0.0	0.0	*0.86	0.0	10^3 Gallons Throughput	73
4-07-008-15	Methyl Alcohol: Breathing Loss	0.0	0.0	0.0	*3.6	0.0	10^3 Gallons Storage Capacity	73
4-07-008-16	Methyl Alcohol: Working Loss	0.0	0.0	0.0	*1.07	0.0	10^3 Gallons Throughput	73
4-07-008-17	N-Propyl Alcohol: Breathing Loss	0.0	0.0	0.0	*1.8	0.0	10^3 Gallons Storage Capacity	73
4-07-008-18	N-Propyl Alcohol: Working Loss	0.0	0.0	0.0	*0.29	0.0	10^3 Gallons Throughput	73
4-07-008-97	Specify Alcohol: Breathing Loss	0.0	0.0	0.0		0.0	10^3 Gallons Storage Capacity	
4-07-008-98	Specify Alcohol: Working Loss	0.0	0.0	0.0		0.0	10^3 Gallons Throughput	
Alkanes (Paraffins)								
4-07-016-01	N-Decane: Breathing Loss	0.0	0.0	0.0	*0.73	0.0	10^3 Gallons Storage Capacity	73
4-07-016-02	N-Decane: Working Loss	0.0	0.0	0.0	*0.04	0.0	10^3 Gallons Throughput	73
4-07-016-03	N-Dodecane: Breathing Loss	0.0	0.0	0.0	*0.15	0.0	10^3 Gallons Storage Capacity	73
4-07-016-04	N-Dodecane: Working Loss	0.0	0.0	0.0	*0.004	0.0	10^3 Gallons Throughput	73
4-07-016-05	N-Heptane: Breathing Loss	0.0	0.0	0.0	*5.8	0.0	10^3 Gallons Storage Capacity	73
4-07-016-06	N-Heptane: Working Loss	0.0	0.0	0.0	*1.3	0.0	10^3 Gallons Throughput	73
4-07-016-09	Pentadecane: Breathing Loss	0.0	0.0	0.0	*0.04	0.0	10^3 Gallons Storage Capacity	73
4-07-016-10	Pentadecane: Working Loss	0.0	0.0	0.0	*0.0008	0.0	10^3 Gallons Throughput	73

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Alkanes (Paraffins) (Continued)								
4-07-016-11	Naphtha: Breathing Loss	0.0	0.0	0.0	*0.15	0.0	10^3 Gallons Storage Capacity	73
4-07-016-12	Naphtha: Working Loss	0.0	0.0	0.0	*0.006	0.0	10^3 Gallons Throughput	73
4-07-016-13	Petroleum Distillate: Breathing Loss	0.0	0.0	0.0	*0.15	0.0	10^3 Gallons Storage Capacity	73, 227
4-07-016-14	Petroleum Distillate: Working Loss	0.0	0.0	0.0	*0.006	0.0	10^3 Gallons Throughput	73, 227
4-07-016-97	Specify Alkane: Breathing Loss	0.0	0.0	0.0		0.0	10^3 Gallons Storage Capacity	
4-07-016-98	Specify Alkane: Working Loss	0.0	0.0	0.0		0.0	10^3 Gallons Throughput	
Alkenes (Olefins)								
4-07-020-01	Dodecene: Breathing Loss	0.0	0.0	0.0	*0.15	0.0	10^3 Gallons Storage Capacity	73
4-07-020-02	Dodecene: Working Loss	0.0	0.0	0.0	*0.005	0.0	10^3 Gallons Throughput	73
4-07-020-03	Heptenes-General: Breathing Loss	0.0	0.0	0.0		0.0	10^3 Gallons Storage Capacity	
4-07-020-04	Heptenes-General: Working Loss	0.0	0.0	0.0		0.0	10^3 Gallons Throughput	
4-07-020-97	Specify Alkene: Breathing Loss	0.0	0.0	0.0		0.0	10^3 Gallons Storage Capacity	
4-07-020-98	Specify Alkene: Working Loss	0.0	0.0	0.0		0.0	10^3 Gallons Throughput	
Amines								
4-07-032-01	Aniline: Breathing Loss	0.0	0.0	0.0	*0.22	0.0	10^3 Gallons Storage Capacity	73
4-07-032-02	Aniline: Working Loss	0.0	0.0	0.0	*0.13	0.0	10^3 Gallons Throughput	73
4-07-032-03	Ethanolamines: Breathing Loss	0.0	0.0	0.0	*0.11	0.0	10^3 Gallons Storage Capacity	73
4-07-032-04	Ethanolamines: Working Loss	0.0	0.0	0.0	*0.004	0.0	10^3 Gallons Throughput	73
4-07-032-05	Ethyleneamines: Breathing Loss	0.0	0.0	0.0	*7.3	0.0	10^3 Gallons Storage Capacity	73
4-07-032-06	Ethyleneamines: Working Loss	0.0	0.0	0.0	*2.5	0.0	10^3 Gallons Throughput	73
4-07-032-97	Specify Amine: Breathing Loss	0.0	0.0	0.0		0.0	10^3 Gallons Storage Capacity	
4-07-032-98	Specify Amine: Working Loss	0.0	0.0	0.0		0.0	10^3 Gallons Throughput	
Aromatics								
4-07-036-01	Benzene: Breathing Loss	0.0	0.0	0.0	*8.0	0.0	10^3 Gallons Storage Capacity	73
4-07-036-02	Benzene: Working Loss	0.0	0.0	0.0	*2.25	0.0	10^3 Gallons Throughput	73
4-07-036-03	Cresol: Breathing Loss	0.0	0.0	0.0	*0.11	0.0	10^3 Gallons Storage Capacity	73
4-07-036-04	Cresol: Working Loss	0.0	0.0	0.0	*0.005	0.0	10^3 Gallons Throughput	73

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Aromatics (Continued)								
4-07-036-05	Cumene: Breathing Loss	0.0	0.0	0.0	*1.5	0.0	10^3 Gallons Storage Capacity	73
4-07-036-06	Cumene: Working Loss	0.0	0.0	0.0	*0.16	0.0	10^3 Gallons Throughput	73
4-07-036-07	Diisopropyl Benzene: Breathing Loss	0.0	0.0	0.0	*0.03	0.0	10^3 Gallons Storage Capacity	73
4-07-036-08	Diisopropyl Benzene: Working Loss	0.0	0.0	0.0	*0.001	0.0	10^3 Gallons Throughput	73
4-07-036-09	Ethyl Benzene: Breathing Loss	0.0	0.0	0.0	*1.8	0.0	10^3 Gallons Storage Capacity	73
4-07-036-10	Ethyl Benzene: Working Loss	0.0	0.0	0.0	*0.27	0.0	10^3 Gallons Throughput	73
4-07-036-11	Methylstyrene: Breathing Loss	0.0	0.0	0.0	*0.73	0.0	10^3 Gallons Storage Capacity	73
4-07-036-12	Methylstyrene: Working Loss	0.0	0.0	0.0	*0.05	0.0	10^3 Gallons Throughput	73
4-07-036-13	Styrene: Breathing Loss	0.0	0.0	0.0	*1.5	0.0	10^3 Gallons Storage Capacity	73
4-07-036-14	Styrene: Working Loss	0.0	0.0	0.0	*0.17	0.0	10^3 Gallons Throughput	73
4-07-036-15	Toluene: Breathing Loss	0.0	0.0	0.0	*3.6	0.0	10^3 Gallons Storage Capacity	73
4-07-036-16	Toluene: Working Loss	0.0	0.0	0.0	*0.66	0.0	10^3 Gallons Throughput	73
4-07-036-17	m-Xylene: Breathing Loss	0.0	0.0	0.0	*1.8	0.0	10^3 Gallons Storage Capacity	73
4-07-036-18	m-Xylene: Working Loss	0.0	0.0	0.0	*0.23	0.0	10^3 Gallons Throughput	73
4-07-036-19	o-Xylene: Breathing Loss	0.0	0.0	0.0	*1.5	0.0	10^3 Gallons Storage Capacity	73
4-07-036-20	o-Xylene: Working Loss	0.0	0.0	0.0	*0.18	0.0	10^3 Gallons Throughput	73
4-07-036-21	p-Xylene: Breathing Loss	0.0	0.0	0.0	*1.8	0.0	10^3 Gallons Storage Capacity	73
4-07-036-22	p-Xylene: Working Loss	0.0	0.0	0.0	*0.24	0.0	10^3 Gallons Throughput	73
4-07-336-23	Xylenes-mixed: Breathing Loss	0.0	0.0	0.0	*0.02	0.0	10^3 Gallons Storage Capacity	73
4-07-036-24	Xylenes-mixed: Working Loss	0.0	0.0	0.0	*1.4	0.0	10^3 Gallons Throughput	73
4-07-036-97	Specify Aromatic: Breathing Loss	0.0	0.0	0.0		0.0	10^3 Gallons Storage Capacity	
4-07-036-98	Specify Aromatic: Working Loss	0.0	0.0	0.0		0.0	10^3 Gallons Throughput	
Carboxylic Acids								
4-07-040-01	Acetic Acid: Breathing Loss	0.0	0.0	0.0	*1.5	0.0	10^3 Gallons Storage Capacity	73
4-07-040-02	Acetic Acid: Working Loss	0.0	0.0	0.0	*0.24	0.0	10^3 Gallons Throughput	73
4-07-040-03	Acrylic Acid: Breathing Loss	0.0	0.0	0.0	*0.73	0.0	10^3 Gallons Storage Capacity	73
4-07-040-04	Acrylic Acid: Working Loss	0.0	0.0	0.0	*0.64	0.0	10^3 Gallons Throughput	73
4-07-040-05	Adipic Acid: Breathing Loss	0.0	0.0	0.0	*0.0003	0.0	10^3 Gallons Storage Capacity	73

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Carboxylic Acids (Continued)								
4-07-040-06	Adipic Acid: Working Loss	0.0	0.0	0.0	*0.0	0.0	10^3 Gallons Throughput	73
4-07-040-07	Formic Acid: Breathing Loss	0.0	0.0	0.0	*2.6	0.0	10^3 Gallons Storage Capacity	73
4-07-040-08	Formic Acid: Working Loss	0.0	0.0	0.0	*0.57	0.0	10^3 Gallons Throughput	73
4-07-040-09	Propionic Acid: Breathing Loss	0.0	0.0	0.0	*0.73	0.0	Day - 10^3 Gallons Storage Capacity	73
4-07-040-10	Propionic Acid: Working Loss	0.0	0.0	0.0	*0.06	0.0	10^3 Gallons Throughput	73
4-07-040-97	Specify Acid: Breathing Loss	0.0	0.0	0.0		0.0	Day - 10^3 Gallons Storage Capacity	
4-07-040-98	Specify Acid: Working Loss	0.0	0.0	0.0		0.0	10^3 Gallons Throughput	
Esters								
4-07-044-01	Butyl Acetate: Breathing Loss	0.0	0.0	0.0	*2.2	0.0	10^3 Gallons Storage Capacity	73
4-07-044-02	Butyl Acetate: Working Loss	0.0	0.0	0.0	*0.34	0.0	10^3 Gallons Throughput	73
4-07-044-03	Butyl Acrylate: Breathing Loss	0.0	0.0	0.0	*1.57	0.0	10^3 Gallons Storage Capacity	73
4-07-044-04	Butyl Acrylate: Working Loss	0.0	0.0	0.0	*0.2	0.0	10^3 Gallons Throughput	73
4-07-044-05	Ethyl Acetate: Breathing Loss	0.0	0.0	0.0	*8.4	0.0	10^3 Gallons Storage Capacity	73
4-07-044-06	Ethyl Acetate: Working Loss	0.0	0.0	0.0	*2.3	0.0	10^3 Gallons Throughput	73
4-07-044-07	Ethyl Acrylate: Breathing Loss	0.0	0.0	0.0	*5.1	0.0	10^3 Gallons Storage Capacity	73
4-07-044-08	Ethyl Acrylate: Working Loss	0.0	0.0	0.0	*1.1	0.0	10^3 Gallons Throughput	73
4-07-044-09	Isobutyl Acrylate: Breathing Loss	0.0	0.0	0.0	*0.31	0.0	10^3 Gallons Storage Capacity	73
4-07-044-10	Isobutyl Acrylate: Working Loss	0.0	0.0	0.0	*0.006	0.0	10^3 Gallons Throughput	73
4-07-044-11	Isopropyl Acetate: Breathing Loss	0.0	0.0	0.0	*7.3	0.0	10^3 Gallons Storage Capacity	73
4-07-044-12	Isopropyl Acetate: Working Loss	0.0	0.0	0.0	*1.8	0.0	10^3 Gallons Throughput	73
4-07-044-13	Methyl Acetate: Breathing Loss	0.0	0.0	0.0	*14.2	0.0	10^3 Gallons Storage Capacity	73
4-07-044-14	Methyl Acetate: Working Loss	0.0	0.0	0.0	*4.8	0.0	10^3 Gallons Throughput	73
4-07-044-15	Methyl Acrylate: Breathing Loss	0.0	0.0	0.0	*8.0	0.0	10^3 Gallons Storage Capacity	73
4-07-044-16	Methyl Acrylate: Working Loss	0.0	0.0	0.0	*2.2	0.0	10^3 Gallons Throughput	73
4-07-044-17	Methyl Methacrylate: Breathing Loss	0.0	0.0	0.0	*3.6	0.0	10^3 Gallons Storage Capacity	73
4-07-044-18	Methyl Methacrylate: Working Loss	0.0	0.0	0.0	*0.7	0.0	10^3 Gallons Throughput	73
4-07-044-19	Vinyl Acetate: Breathing Loss	0.0	0.0	0.0	*9.1	0.0	10^3 Gallons Storage Capacity	73
4-07-044-20	Vinyl Acetate: Working Loss	0.0	0.0	0.0	*2.7	0.0	10^3 Gallons Throughput	73
4-07-044-21	n-Propyl Acetate: Breathing Loss	0.0	0.0	0.0	*0.01	0.0	10^3 Gallons Storage Capacity	73

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Esters (Continued)								
4-07-044-22	n-Propyl Acetate: Working Loss	0.0	0.0	0.0	*1.1	0.0	10^3 Gallons Throughput	73
4-07-044-23	i-Butyl-i-Butyrate: Breathing Loss	0.0	0.0	0.0	*0.006	0.0	10^3 Gallons Storage Capacity	73
4-07-044-24	i-Butyl-i-Butyrate: Working Loss	0.0	0.0	0.0	*0.27	0.0	10^3 Gallons Throughput	73
4-07-044-97	Specify Ester: Breathing Loss	0.0	0.0	0.0		0.0	10^3 Gallons Storage Capacity	
4-07-044-98	Specify Ester: Working Loss	0.0	0.0	0.0		0.0	10^3 Gallons Throughput	
Ethers								
4-07-048-01	Methyl-tert-Butyl Ether: Breathing Loss	0.0	0.0	0.0	*0.07	0.0	10^3 Gallons Storage Capacity	73
4-07-048-02	Methyl-tert-Butyl Ether: Working Loss	0.0	0.0	0.0	*9.2	0.0	10^3 Gallons Throughput	73
4-07-048-97	Specify Ether: Breathing Loss	0.0	0.0	0.0		0.0	10^3 Gallons Storage Capacity	
4-07-048-98	Specify Ether: Working Loss	0.0	0.0	0.0		0.0	10^3 Gallons Throughput	
Glycol Ethers[fff]								
4-07-052-01	Butyl Carbitol: Breathing Loss	0.0	0.0	0.0	*0.001	0.0	10^3 Gallons Storage Capacity	73
4-07-052-02	Butyl Carbitol: Working Loss	0.0	0.0	0.0	*0.01	0.0	10^3 Gallons Throughput	73
4-07-052-03	Butyl Cellosolve: Breathing Loss	0.0	0.0	0.0	*0.001	0.0	10^3 Gallons Storage Capacity	73
4-07-052-04	Butyl Cellosolve: Working Loss	0.0	0.0	0.0	*0.03	0.0	10^3 Gallons Throughput	73
4-07-052-05	Carbitol: Breathing Loss	0.0	0.0	0.0	*0.0005	0.0	10^3 Gallons Storage Capacity	73
4-07-052-06	Carbitol: Working Loss	0.0	0.0	0.0	*0.006	0.0	10^3 Gallons Throughput	73
4-07-052-07	Cellosolve: Breathing Loss	0.0	0.0	0.0	*0.004	0.0	10^3 Gallons Storage Capacity	73
4-07-052-08	Cellosolve: Working Loss	0.0	0.0	0.0	*0.16	0.0	10^3 Gallons Throughput	73
4-07-052-09	Diethylene Glycol: Breathing Loss	0.0	0.0	0.0	*0.003	0.0	10^3 Gallons Storage Capacity	73
4-07-052-10	Diethylene Glycol: Working Loss	0.0	0.0	0.0	*0.0	0.0	10^3 Gallons Throughput	73
4-07-052-11	Methyl Carbitol: Breathing Loss	0.0	0.0	0.0	*0.0004	0.0	10^3 Gallons Storage Capacity	73
4-07-052-12	Methyl Carbitol: Working Loss	0.0	0.0	0.0	*0.006	0.0	10^3 Gallons Throughput	73
4-07-052-13	Methyl Cellosolve: Breathing Loss	0.0	0.0	0.0	*0.004	0.0	10^3 Gallons Storage Capacity	73
4-07-052-14	Methyl Cellosolve: Working Loss	0.0	0.0	0.0	*0.22	0.0	10^3 Gallons Throughput	73
4-07-052-15	Polyethylene Glycol: Breathing Loss	0.0	0.0	0.0	*0.0	0.0	10^3 Gallons Storage Capacity	73
4-07-052-16	Polyethylene Glycol: Working Loss	0.0	0.0	0.0	*0.0	0.0	10^3 Gallons Throughput	73
4-07-052-17	Triethylene Glycol: Breathing Loss	0.0	0.0	0.0	*0.0	0.0	10^3 Gallons Storage Capacity	73

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Glycol Ethers (Continued)[fff]								
4-07-052-18	Triethylene Glycol: Working Loss	0.0	0.0	0.0	*0.0	0.0	10^3 Gallons Throughput	73
4-07-052-97	Specify Glycol Ether: Breathing Loss	0.0	0.0	0.0		0.0	10^3 Gallons Storage Capacity	
4-07-052-98	Specify Glycol Ether: Working Loss	0.0	0.0	0.0		0.0	10^3 Gallons Throughput	
Glycols								
4-07-056-01	1,4-Butanediol: Breathing Loss	0.0	0.0	0.0	*NEG	0.0	10^3 Gallons Storage Capacity	232
4-07-056-02	1,4-Butanediol: Working Loss	0.0	0.0	0.0	*NEG	0.0	10^3 Gallons Throughput	232
4-07-056-03	Ethylene Glycol: Breathing Loss	0.0	0.0	0.0	*0.036	0.0	10^3 Gallons Storage Capacity	73
4-07-056-04	Ethylene Glycol: Working Loss	0.0	0.0	0.0	*0.02	0.0	10^3 Gallons Throughput	73
4-07-056-05	Dipropylene Glycol: Breathing Loss	0.0	0.0	0.0	*0.0002	0.0	10^3 Gallons Storage Capacity	73
4-07-056-06	Dipropylene Glycol: Working Loss	0.0	0.0	0.0	*0.013	0.0	10^3 Gallons Throughput	73
4-07-056-07	Glycerol: Breathing Loss	0.0	0.0	0.0	*0.0	0.0	10^3 Gallons Storage Capacity	73
4-07-056-08	Glycerol: Working Loss	0.0	0.0	0.0	*0.0	0.0	10^3 Gallons Throughput	73
4-07-056-09	Propylene Glycol: Breathing Loss	0.0	0.0	0.0	*0.007	0.0	10^3 Gallons Storage Capacity	73
4-07-056-10	Propylene Glycol: Working Loss	0.0	0.0	0.0	*0.0	0.0	10^3 Gallons Throughput	73
4-07-056-97	Specify Glycol: Breathing Loss	0.0	0.0	0.0		0.0	10^3 Gallons Storage Capacity	
4-07-056-98	Specify Glycol: Working Loss	0.0	0.0	0.0		0.0	10^3 Gallons Throughput	
Halogenated Organics								
4-07-060-01	Benzyl Chloride: Breathing Loss	0.0	0.0	0.0	*0.05	0.0	10^3 Gallons Storage Capacity	73
4-07-060-02	Benzyl Chloride: Working Loss	0.0	0.0	0.0	*0.002	0.0	10^3 Gallons Throughput	73
4-07-060-03	Caprolactam: Breathing Loss	0.0	0.0	0.0	*NEG	0.0	10^3 Gallons Storage Capacity	232
4-07-060-04	Caprolactam: Working Loss	0.0	0.0	0.0	*NEG	0.0	10^3 Gallons Throughput	232
4-07-060-05	Carbon Tetrachloride: Breathing Loss	0.0	0.0	0.0	*17.9	0.0	10^3 Gallons Storage Capacity	73
4-07-060-06	Carbon Tetrachloride: Working Loss	0.0	0.0	0.0	*5.2	0.0	10^3 Gallons Throughput	73
4-07-060-07	Chlorobenzene: Breathing Loss	0.0	0.0	0.0	*2.5	0.0	10^3 Gallons Storage Capacity	73
4-07-060-08	Chlorobenzene: Working Loss	0.0	0.0	0.0	*0.36	0.0	10^3 Gallons Throughput	73
4-07-060-09	o-Dichlorobenzene: Breathing Loss	0.0	0.0	0.0	*0.73	0.0	10^3 Gallons Storage Capacity	73
4-07-060-10	o-Dichlorobenzene: Working Loss	0.0	0.0	0.0	*0.05	0.0	10^3 Gallons Throughput	73

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Halogenated Organics (Continued)								
4-07-060-11	p-Dichlorobenzene: Breathing Loss	0.0	0.0	0.0	*0.73	0.0	10^3 Gallons Storage Capacity	73
4-07-060-12	p-Dichlorobenzene: Working Loss	0.0	0.0	0.0	*0.06	0.0	10^3 Gallons Throughput	73
4-07-060-13	Epichlorohydrin: Breathing Loss	0.0	0.0	0.0	*2.5	0.0	10^3 Gallons Storage Capacity	73
4-07-060-14	Epichlorohydrin: Working Loss	0.0	0.0	0.0	*0.40	0.0	10^3 Gallons Throughput	73
4-07-060-15	Ethylene Dibromide: Breathing Loss	0.0	0.0	0.0	*4.75	0.0	10^3 Gallons Storage Capacity	73
4-07-060-16	Ethylene Dibromide: Working Loss	0.0	0.0	0.0	*0.77	0.0	10^3 Gallons Throughput	73
4-07-060-17	Ethylene Dichloride: Breathing Loss	0.0	0.0	0.0	*8.8	0.0	10^3 Gallons Storage Capacity	73
4-07-060-18	Ethylene Dichloride: Working Loss	0.0	0.0	0.0	*2.3	0.0	10^3 Gallons Throughput	73
4-07-060-19	Methylene Chloride: Breathing Loss	0.0	0.0	0.0	*0.0	0.0	10^3 Gallons Storage Capacity	73
4-07-060-20	Methylene Chloride: Working Loss	0.0	0.0	0.0	*0.0	0.0	10^3 Gallons Throughput	73
4-07-060-21	Perchloroethylene: Breathing Loss	0.0	0.0	0.0	*5.1	0.0	10^3 Gallons Storage Capacity	73
4-07-060-22	Perchloroethylene: Working Loss	0.0	0.0	0.0	*0.84	0.0	10^3 Gallons Throughput	73
4-07-060-23	Trichloroethylene: Breathing Loss	0.0	0.0	0.0	*4.4	0.0	10^3 Gallons Storage Capacity	73
4-07-060-24	Trichloroethylene: Working Loss	0.0	0.0	0.0	*2.8	0.0	10^3 Gallons Throughput	73
4-07-060-97	Specify in Comments: Breathing Loss	0.0	0.0	0.0		0.0	10^3 Gallons Storage Capacity	
4-07-060-98	Specify in Comments: Working Loss	0.0	0.0	0.0		0.0	10^3 Gallons Throughput	
Isocyanates								
4-07-064-01	MDI: Breathing Loss	0.0	0.0	0.0	*NEG	0.0	10^3 Gallons Storage Capacity	232
4-07-064-02	MDI: Working Loss	0.0	0.0	0.0	*NEG	0.0	10^3 Gallons Throughput	232
4-07-064-03	TDI: Breathing Loss	0.0	0.0	0.0	*0.036	0.0	10^3 Gallons Storage Capacity	73
4-07-064-04	TDI: Working Loss	0.0	0.0	0.0	*0.0008	0.0	10^3 Gallons Throughput	73
4-07-064-97	Specify Isocyanate: Breathing Loss	0.0	0.0	0.0		0.0	10^3 Gallons Storage Capacity	
4-07-064-98	Specify Isocyanate: Working Loss	0.0	0.0	0.0		0.0	10^3 Gallons Throughput	
Ketones								
4-07-068-01	Cyclohexanone: Breathing Loss	0.0	0.0	0.0	*1.8	0.0	10^3 Gallons Storage Capacity	73
4-07-068-02	Cyclohexanone: Working Loss	0.0	0.0	0.0	*0.2	0.0	10^3 Gallons Throughput	73
4-07-068-13	Methylamyl Ketone: Breathing Loss	0.0	0.0	0.0	*0.0005	0.0	10^3 Gallons Storage Capacity	73
4-07-068-14	Methylamyl Ketone: Working Loss	0.0	0.0	0.0	*0.008	0.0	10^3 Gallons Throughput	73

---

[*] Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Ketones (Continued)								
4-07-068-97	Specify Ketone: Breathing Loss	0.0	0.0	0.0		0.0	10^3 Gallons Storage Capacity	
4-07-068-98	Specify Ketone: Working Loss	0.0	0.0	0.0		0.0	10^3 Gallons Throughput	
Nitriles								
4-07-076-01	Acrylonitrile: Breathing Loss	0.0	0.0	0.0	*6.2	0.0	10^3 Gallons Storage Capacity	73
4-07-076-02	Acrylonitrile: Working Loss	0.0	0.0	0.0	*1.8	0.0	10^3 Gallons Throughput	73
4-07-076-97	Specify Nitrile: Breathing Loss	0.0	0.0	0.0		0.0	10^3 Gallons Storage Capacity	
4-07-076-98	Specify Nitrile: Working Loss	0.0	0.0	0.0		0.0	10^3 Gallons Throughput	
Nitro Compounds								
4-07-080-01	Nitrobenzene: Breathing Loss	0.0	0.0	0.0	*0.36	0.0	10^3 Gallons Storage Capacity	73
4-07-080-02	Nitrobenzene: Working Loss	0.0	0.0	0.0	*0.026	0.0	10^3 Gallons Throughput	73
4-07-080-97	Specify in Comments: Breathing Loss	0.0	0.0	0.0		0.0	10^3 Gallons Storage Capacity	
4-07-080-98	Specify in Comments: Working Loss	0.0	0.0	0.0		0.0	10^3 Gallons Throughput	
Phenols								
4-07-084-01	Nonylphenol: Breathing Loss	0.0	0.0	0.0	*NEG	0.0	10^3 Gallons Storage Capacity	232
4-07-084-02	Nonylphenol: Working Loss	0.0	0.0	0.0	*NEG	0.0	10^3 Gallons Throughput	232
4-07-084-03	Phenol: Breathing Loss	0.0	0.0	0.0	*0.15	0.0	10^3 Gallons Storage Capacity	73
4-07-084-04	Phenol: Working Loss	0.0	0.0	0.0	*0.006	0.0	10^3 Gallons Throughput	73
4-07-084-97	Specify Phenol: Breathing Loss	0.0	0.0	0.0		0.0	10^3 Gallons Storage Capacity	
4-07-084-98	Specify Phenol: Working Loss	0.0	0.0	0.0		0.0	10^3 Gallons Throughput	
ORGANIC CHEMICAL STORAGE - FLOATING ROOF TANKS - MAJOR GROUPS 28, 29, 30, 51								
Aldehydes								
4-07-172-05	N-Butraldehyde: Standing Loss	0.0	0.0	0.0	*1.5	0.0	10^3 Gallons Storage Capacity	73
4-07-172-06	N-Butraldehyde: Withdrawal Loss	0.0	0.0	0.0	*0.002	0.0	10^3 Gallons Throughput	73
4-07-172-07	Formalin: Standing Loss	0.0	0.0	0.0	*0.0004	0.0	10^3 Gallons Storage Capacity	73, 256
4-07-172-08	Formalin: Withdrawal Loss	0.0	0.0	0.0	*0.002	0.0	10^3 Gallons Throughput	73, 256
4-07-172-09	Isobutraldehyde: Standing Loss	0.0	0.0	0.0	*2.2	0.0	10^3 Gallons Storage Capacity	73
4-07-172-10	Isobutraldehyde: Withdrawal Loss	0.0	0.0	0.0	*0.002	0.0	10^3 Gallons Throughput	73

---

[*] Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Aldehydes (Continued)								
4-07-172-11	Propionaldehyde: Standing Loss	0.0	0.0	0.0	*3.3	0.0	10^3 Gallons Storage Capacity	73
4-07-172-12	Propionaldehyde: Withdrawal Loss	0.0	0.0	0.0	*0.002	0.0	10^3 Gallons Throughput	73
4-07-172-97	Specify Aldehyde: Standing Loss	0.0	0.0	0.0		0.0	10^3 Gallons Storage Capacity	
4-07-172-98	Specify Aldehyde: Withdrawal Loss	0.0	0.0	0.0	*0.002	0.0	10^3 Gallons Throughput	233
Alkanes (Paraffins)								
4-07-176-01	Cyclohexane: Standing Loss	0.0	0.0	0.0	*1.35	0.0	10^3 Gallons Storage Capacity	73
4-07-176-02	Cyclohexane: Withdrawal Loss	0.0	0.0	0.0	*0.002	0.0	10^3 Gallons Throughput	73
4-07-176-03	N-Hexane: Standing Loss	0.0	0.0	0.0	*2.2	0.0	10^3 Gallons Storage Capacity	73
4-07-176-04	N-Hexane: Withdrawal Loss	0.0	0.0	0.0	*0.002	0.0	10^3 Gallons Throughput	73
4-07-176-97	Specify Alkane: Standing Loss	0.0	0.0	0.0		0.0	10^3 Gallons Storage Capacity	
4-07-176-98	Specify Alkane: Withdrawal Loss	0.0	0.0	0.0	*0.002	0.0	10^3 Gallons Throughput	233
Ethers								
4-07-208-01	Ethyl Ether: Standing Loss	0.0	0.0	0.0	*7.2	0.0	10^3 Gallons Storage Capacity	73
4-07-208-02	Ethyl Ether: Withdrawal Loss	0.0	0.0	0.0	*0.002	0.0	10^3 Gallons Throughput	73
4-07-208-03	Propylene Oxide: Standing Loss	0.0	0.0	0.0	*5.5	0.0	10^3 Gallons Storage Capacity	73
4-07-208-04	Propylene Oxide: Withdrawal Loss	0.0	0.0	0.0	*0.002	0.0	10^3 Gallons Throughput	73
4-07-208-97	Specify Ether: Standing Loss	0.0	0.0	0.0		0.0	10^3 Gallons Storage Capacity	
4-07-208-98	Specify Ether: Withdrawal Loss	0.0	0.0	0.0	*0.002	0.0	10^3 Gallons Throughput	233
Halogenated Organics								
4-07-220-01	Carbon Tetrachloride: Standing Loss	0.0	0.0	0.0	*2.9	0.0	10^3 Gallons Storage Capacity	73
4-07-220-02	Carbon Tetrachloride: Withdrawal Loss	0.0	0.0	0.0	*0.004	0.0	10^3 Gallons Throughput	73
4-07-220-03	Chloroform: Standing Loss	0.0	0.0	0.0	*4.0	0.0	10^3 Gallons Storage Capacity	73
4-07-220-04	Chloroform: Withdrawal Loss	0.0	0.0	0.0	*0.004	0.0	10^3 Gallons Throughput	73
4-07-220-05	Ethylene Dichloride: Standing Loss	0.0	0.0	0.0	*1.3	0.0	10^3 Gallons Storage Capacity	73
4-07-220-06	Ethylene Dichloride: Withdrawal Loss	0.0	0.0	0.0	*0.003	0.0	10^3 Gallons Throughput	73
4-07-220-07	Methylene Chloride: Standing Loss	0.0	0.0	0.0	*0.0	0.0	10^3 Gallons Storage Capacity	73

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO$_x$ Lbs/Unit	NO$_x$ Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Halogenated Organics (Continued)								
4-07-220-08	Methylene Chloride: Withdrawal Loss	0.0	0.0	0.0	*0.0	0.0	10^3 Gallons Throughput	73
4-07-220-09	1,1,1-Trichloroethylene: Standing Loss	0.0	0.0	0.0	*1.5	0.0	10^3 Gallons Storage Capacity	73
4-07-220-10	1,1,1-Trichloroethylene: Withdrawal Loss	0.0	0.0	0.0	*0.004	0.0	10^3 Gallons Throughput	73
4-07-220-97	Specify in Comments: Standing Loss	0.0	0.0	0.0		0.0	10^3 Gallons Storage Capacity	
4-07-220-98	Specify in Comments: Withdrawal Loss	0.0	0.0	0.0	*0.004	0.0	10^3 Gallons Throughput	233
Ketones								
4-07-228-01	Acetone: Standing Loss	0.0	0.0	0.0	*2.2	0.0	10^3 Gallons Storage Capacity	73
4-07-228-02	Acetone: Withdrawal Loss	0.0	0.0	0.0	*0.002	0.0	10^3 Gallons Throughput	73
4-07-228-03	Methyl Ethyl Ketone: Standing Loss	0.0	0.0	0.0	*1.1	0.0	10^3 Gallons Storage Capacity	73
4-07-228-04	Methyl Ethyl Ketone: Withdrawal Loss	0.0	0.0	0.0	*0.002	0.0	10^3 Gallons Throughput	73
4-07-228-05	MIBK: Standing Loss	0.0	0.0	0.0	*0.29	0.0	10^3 Gallons Storage Capacity	73
4-07-228-06	MIBK: Withdrawal Loss	0.0	0.0	0.0	*0.002	0.0	10^3 Gallons Throughput	73
4-07-228-97	Specify Ketone: Standing Loss	0.0	0.0	0.0		0.0	10^3 Gallons Storage Capacity	
4-07-228-98	Specify Ketone: Withdrawal Loss	0.0	0.0	0.0	*0.002	0.0	10^3 Gallons Throughput	233
Mercaptans (Thiols)								
4-07-232-01	Ethyl Mercaptan: Standing Loss	0.0	0.0	0.0	*5.8	0.0	10^3 Gallons Storage Capacity	73
4-07-232-02	Ethyl Mercaptan: Withdrawal Loss	0.0	0.0	0.0	*0.002	0.0	10^3 Gallons Throughput	73
4-07-232-97	Specify Mercaptan: Standing Loss	0.0	0.0	0.0		0.0	10^3 Gallons Storage Capacity	
4-07-232-98	Specify Mercaptan: Withdrawal Loss	0.0	0.0	0.0	*0.002	0.0	10^3 Gallons Throughput	233
ORGANIC CHEMICAL STORAGE - PRESSURE TANKS								
Aldehydes								
4-07-812-01	Acetaldehyde: Withdrawal Loss	0.0	0.0	0.0	*16.1	0.0	10^3 Gallons Throughput	292
4-07-812-02	Acrolein: Withdrawal Loss	0.0	0.0	0.0	*6.0	0.0	10^3 Gallons Throughput	292
Alkanes (Paraffins)								
4-07-816-01	Ethane: Withdrawal Loss	0.0	0.0	0.0	*0.0	0.0	10^3 Gallons Throughput	292
4-07-816-02	Butane: Withdrawal Loss	0.0	0.0	0.0	*0.0	0.0	10^3 Gallons Throughput	292

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Alkanes (Paraffins) (Continued)								
4-07-816-03	- Methane: Withdrawal Loss	0.0	0.0	0.0	*0.0	0.0	10^3 Gallons Throughput	292
4-07-816-04	- Natural Gas: Withdrawal Loss	0.0	0.0	0.0	*0.0	0.0	10^3 Gallons Throughput	292
4-07-816-05	- Propane: Withdrawal Loss	0.0	0.0	0.0	*0.0	0.0	10^3 Gallons Throughput	292
4-07-816-99	- Specify Alkane: Withdrawal Loss	0.0	0.0	0.0	*0.0	0.0	10^3 Gallons Throughput	292
Alkenes (Olefins)								
4-07-820-01	- 1,3-Butadiene: Withdrawal Loss	0.0	0.0	0.0	*0.0	0.0	10^3 Gallons Throughput	292
4-07-820-02	- 1-Butene: Withdrawal Loss	0.0	0.0	0.0	*0.0	0.0	10^3 Gallons Throughput	292
4-07-820-03	- 2-Butene: Withdrawal Loss	0.0	0.0	0.0	*0.0	0.0	10^3 Gallons Throughput	292
4-07-820-04	- Ethylene: Withdrawal Loss	0.0	0.0	0.0	*0.0	0.0	10^3 Gallons Throughput	292
4-07-820-05	- Isobutylene: Withdrawal Loss	0.0	0.0	0.0	*0.0	0.0	10^3 Gallons Throughput	292
4-07-820-06	- Propylene: Withdrawal Loss	0.0	0.0	0.0	*0.0	0.0	10^3 Gallons Throughput	292
4-07-820-07	- Isoprene: Withdrawal Loss	0.0	0.0	0.0	12.8	0.0	10^3 Gallons Throughput	292
4-07-820-08	- Methylallene: Withdrawal Loss	0.0	0.0	0.0	27.9	0.0	10^3 Gallons Throughput	292
4-07-820-09	- 1-Pentane: Withdrawal Loss	0.0	0.0	0.0	18.1	0.0	10^3 Gallons Throughput	292
4-07-820-10	- Piperylene: Withdrawal Loss	0.0	0.0	0.0	9.3	0.0	10^3 Gallons Throughput	292
4-07-820-11	- Cyclopentene: Withdrawal Loss	0.0	0.0	0.0	10.4	0.0	10^3 Gallons Throughput	292
4-07-820-99	- Specify Alkene: Withdrawal Loss	0.0	0.0	0.0		0.0	10^3 Gallons Throughput	
Alkynes (Acetylenes)								
4-07-824-01	- Acetylene: Withdrawal Loss	0.0	0.0	0.0	*0.0	0.0	10^3 Gallons Throughput	292
4-07-824-99	- Specify Alkyne: Withdrawal Loss	0.0	0.0	0.0	*0.0	0.0	10^3 Gallons Throughput	292
Amines								
4-07-832-01	- Methylamine: Withdrawal Loss	0.0	0.0	0.0	*0.0	0.0	10^3 Gallons Throughput	292
4-07-832-02	- Dimethylamine: Withdrawal Loss	0.0	0.0	0.0	*0.0	0.0	10^3 Gallons Throughput	292
4-07-832-03	- Trimethylamine: Withdrawal Loss	0.0	0.0	0.0	*0.0	0.0	10^3 Gallons Throughput	292
4-07-832-99	- Specify Amine: Withdrawal Loss	0.0	0.0	0.0	*0.0	0.0	10^3 Gallons Throughput	292
Ethers								
4-07-848-01	- Ethylene Oxide: Withdrawal Loss	0.0	0.0	0.0	*0.0	0.0	10^3 Gallons Throughput	292
4-07-848-99	- Specify Ether: Withdrawal Loss	0.0				0.0	10^3 Gallons Throughput	
Halogenated Organics								
4-07-860-01	- Ethyl Chloride: Withdrawal Loss	0.0	0.0	0.0	*0.0	0.0	10^3 Gallons Throughput	292
4-07-860-02	- Methyl Chloride: Withdrawal Loss	0.0	0.0	0.0	*0.0	0.0	10^3 Gallons Throughput	292
4-07-860-03	- Phosgene: Withdrawal Loss	0.0	0.0	0.0	*0.0	0.0	10^3 Gallons Throughput	292
4-07-860-04	- Vinyl Chloride: Withdrawal Loss	0.0	0.0	0.0	*0.0	0.0	10^3 Gallons Throughput	292
4-07-860-99	- Specify in Comments: Withdrawal Loss	0.0				0.0	10^3 Gallons Throughput	
Isocyanates								
4-07-864-01	- Methyl Isocyanate: Withdrawal Loss	0.0	0.0	0.0	*0.0	0.0	10^3 Gallons Throughput	292

[*] Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO$_x$ Lbs/Unit	NO$_x$ Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Isocyanates (Continued)								
4-07-864-99	Specify Isocyanate: Withdrawal Loss	0.0				0.0	10^3 Gallons Throughput	
Mercaptans (Thiols)								
4-07-872-01	Methyl Mercaptan: Withdrawal Loss	0.0	0.0	0.0	*0.0	0.0	10^3 Gallons Throughput	292
4-07-872-99	Specify Mercaptan: Withdrawal Loss	0.0				0.0	10^3 Gallons Throughput	
Miscellaneous								
4-07-999-97	Specify in Comments: Breathing Loss						10^3 Gallons Storage Capacity	
4-07-999-98	Specify in Comments: Withdrawal Loss						10^3 Gallons Transferred	
ORGANIC CHEMICAL TRANSPORTATION - MAJOR GROUPS 28, 29, 30, 51								
Specify Liquid								
4-08-999-95	Cars/Trucks: Loading Rack						10^3 Gallons Transferred	
4-08-999-97	Marine Vessels: Loading Rack						10^3 Gallons Transferred	
4-08-999-99	Loading Rack	0.0	0.0	0.0		0.0	10^3 Gallons Transferred	
ORGANIC SOLVENT EVAPORATION - MISCELLANEOUS								
Solvent Extraction Processes								
4-90-001-01	Petroleum Naphtha (Stoddard)	0.0	0.0	0.0	*2000.0^d	0.0	Tons Solvent Consumed	
4-90-001-02	MEK	0.0	0.0	0.0	*2000.0^d	0.0	Tons Solvent Consumed	
4-90-001-03	MIBK	0.0	0.0	0.0	*2000.0^d	0.0	Tons Solvent Consumed	
4-90-001-04	Furfural	0.0	0.0	0.0	*2000.0^d	0.0	Tons Solvent Consumed	
4-90-001-05	Trichloroethylene	0.0	0.0	0.0	*2000.0^d	0.0	Tons Solvent Consumed	
4-90-001-99	Other Not Classified (Specify in Comments)	0.0	0.0	0.0	*2000.0^d	0.0	Tons Solvent Consumed	
Waste Solvent Recovery Operations								
4-90-002-01	Storage Tank Vent	0.0	0.0	0.0	0.02	0.0	Tons Reclaimed Solvent	
4-90-002-02	Condenser Vent	0.0	0.0	0.0	3.3	0.0	Tons Reclaimed Solvent	
4-90-002-03	Incinerator Stack	1.44			0.02		Tons Reclaimed Solvent	
4-90-002-04	Solvent Spillage	0.0	0.0	0.0	0.2	0.0	Tons Reclaimed Solvent	
4-90-002-05	Solvent Loading	0.0	0.0	0.0	0.72	0.0	Tons Reclaimed Solvent	
4-90-002-06	Fugitive Leaks[#]	0.0	0.0	0.0		0.0	Process Unit-Year	
4-90-002-99	Other Not Classified (Specify in Comments)	0.0	0.0	0.0		0.0	Tons Reclaimed Solvent	

[#] Note that fugitive emissions are reported in units of lbs/process unit-year rather than lbs/ton product as in the NEDS Source Classification Codes and Emission Factor Listing dated October 1985.

[*] Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Rail Car Cleaning - 4742, 4011, 4013								
4-90-003-01	Low Vapor Pressure, High Viscosity Group (Ethylene Glycol)	0.0	0.0	0.0	0.0007	0.0	Tank Cars Cleaned	
4-90-003-02	Medium Vapor Pressure, Medium Viscosity Cargo (Chlorobenzene)	0.0	0.0	0.0	0.035	0.0	Tank Cars Cleaned	
4-90-003-03	Low Vapor Pressure, Medium Viscosity Cargo (o-Dichlorobenzene)	0.0	0.0	0.0	0.166	0.0	Tank Cars Cleaned	
4-90-003-04	Low Vapor Pressure, High Viscosity Cargo (Creosote)	0.0	0.0	0.0	5.2	0.0	Tank Cars Cleaned	
4-90-003-99	Other Not Classified (Specify in Comments)	0.0	0.0	0.0		0.0	Tank Cars Cleaned	
Tank Trucks Cleaning								
4-90-004-01	High Vapor Pressure, Low Viscosity Cargo (Acetone)	0.0	0.0	0.0	0.69	0.0	Tank Trucks Cleaned	
4-90-004-02	High Vapor Pressure, Low Viscosity Cargo (Perchloroethylene)	0.0	0.0	0.0	0.47	0.0	Tank Trucks Cleaned	
4-90-004-03	Medium Vapor Pressure, Medium Viscosity Cargo (Methyl Methacrylate)	0.0	0.0	0.0	0.07	0.0	Tank Trucks Cleaned	
4-90-004-04	Low Vapor Pressure, Low Viscosity Cargo (Phenol)	0.0	0.0	0.0	0.012	0.0	Tank Trucks Cleaned	
4-90-004-05	Low Vapor Pressure, High Viscosity Cargo (Propylene Glycol)	0.0	0.0	0.0	0.002	0.0	Tank Trucks Cleaned	
4-90-004-99	Other Not Classified (Specify in Comments)	0.0	0.0	0.0		0.0	Tank Trucks Cleaned	
Organic Solvent Evaporation - Fuel Fired Equipment								
Incinerators								
4-90-900-11	Distillate Oil (No. 2)				*0.4		10^3 Gallons Burned	130
4-90-900-12	Residual				*0.56		10^3 Gallons Burned	130
4-90-900-13	Natural Gas				*5.6		10^6 Cubic Feet Burned	130
Flares								
4-90-900-23	Natural Gas				*5.6		10^6 Cubic Feet Burned	130
Miscellaneous Volatile Organic Compound Evaporation								
4-90-999-98	Identify the Process and the Solvent in Comments	0.0	0.0	0.0		0.0	Gallons Solvent Consumed	
4-90-999-99	Identify the Process and the Solvent in Comments	0.0	0.0	0.0	*2000.0[d]	0.0	Tons Solvent Consumed	

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
SOLID WASTE DISPOSAL - GOVERNMENT								
Municipal Incineration - 4953								
5-01-001-01	Multiple Chamber	30.0	2.5	3.0	1.5	35.0	Tons Burned	
5-01-001-02	Single Chamber	15.0	2.5	2.0	15.0	20.0	Tons Burned	
Open Burning Dump								
5-01-002-01	General Refuse	16.0	1.0	6.0	30.0	85.0	Tons Burned	
5-01-002-02	Vegetation Only	17.0	*0.0[c]	*4.0[c]	19.0	140.0	Tons Burned	
Other Incineration								
5-01-005-05	Pathological	8.0	0.0	3.0	*10.0	0.0	Tons Burned	244
5-01-005-06	Sludge	100.0	1.0	5.0	1.0	0.0	Tons Dry Sludge	
5-01-005-07	Conical Design (Tee Pee) Municipal Refuse	20.0	2.0	5.0	20.0	60.0	Tons Burned	
5-01-005-08	Conical Design (Tee Pee) Wood Refuse	7.0	0.1	1.0	11.0	130.0	Tons Burned	
5-01-005-10	Trench Burner: Wood	13.0	0.1	4.0	*19.0		Tons Burned	312
5-01-005-11	Trench Burner: Tires	138.0			*6.0		Tons Burned	164
5-01-005-12	Trench Burner: Refuse	37.0	2.5		*13.3		Tons Burned	164
Firefighting								
5-01-006-01	Structure: Jet Fuel				*0.4		10^3 Gallons Burned	312
5-01-006-02	Structure: Distillate Oil				*0.4		10^3 Gallons Burned	312
5-01-006-03	Structure: Kerosene				*0.4		10^3 Gallons Burned	312
5-01-006-04	Structure: Wood Pallets				*19.0		Tons Burned	312
Sewage Treatment								
5-01-007-01	Entire Plant				*3		10^6 Gallons Wastewater	258
5-01-007-02	Primary Settling Tank				*1.5		10^6 Gallons Wastewater	258
5-01-007-03	Secondary Settling Tank				*1.5		10^6 Gallons Wastewater	258
5-01-007-04	Aeration Tank				*NEG		10^6 Gallons Wastewater	258
Auxiliary Fuel/No Emissions								
5-01-900-05	Distillate Oil	0.0	0.0	0.0	0.0	0.0	10^3 Gallons Burned	
5-01-900-06	Natural Gas	0.0	0.0	0.0	0.0	0.0	10^6 Cubic Feet Burned	
5-01-900-10	Liquid Petroleum Gas (LPG)	0.0	0.0	0.0	0.0	0.0	10^3 Gallons Burned	
SOLID WASTE DISPOSAL - COMMERCIAL/INSTITUTIONAL								
Incineration - General								
5-02-001-01	Multiple Chamber	7.0	2.5	3.0	3.0	10.0	Tons Burned	
5-02-001-02	Single Chamber	15.0	2.5	2.0	15.0	20.0	Tons Burned	
5-02-001-03	Controlled Air	1.4	1.5	10.0	NEG	0.0	Tons Burned	

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Incineration - General (Continued)								
5-02-001-04	Conical Design: Municipal Refuse	20.0	2.0	5.0	20.0	60.0	Tons Burned	
5-02-001-05	Conical Design: Wood Refuse	7.0	0.1	1.0	11.0	130.0	Tons Burned	
Open Burning								
5-02-002-01	Wood	17.0	*0.0^c	*4.0^c	19.0	140.0	Tons Burned	
5-02-002-02	Refuse	16.0	1.0	6.0	30.0	85.0	Tons Burned	
Apartment Incineration								
5-02-003-01	Flue Fed	30.0	0.5	3.0	15.0	20.0	Tons Burned	
5-02-003-02	Flue Fed (With Afterburner and Draft Controls)	6.0	0.5	10.0	3.0	10.0	Tons Burned	
Incineration (Special Purpose)								
5-02-005-05	Pathological Waste	8.0	8.0	3.0	*3.0	0.0	Tons Burned	140
5-02-005-06	Sludge	100.0	1.0	5.0	1.0	0.0	Tons Dry Sludge	
Landfill Dump								
5-02-006-01	Waste Gas Flare				*5.6		10^6 Cubic Feet Burned	314
5-02-006-02	Municipal: Fugitive Emissions						Acres of Landfill	
Asbestos Removal								
5-02-009-01	General				*0.0		Tons Waste Removed	285
Auxiliary Fuel/No Emissions								
5-02-900-05	Distillate Oil	0.0	0.0	0.0	0.0	0.0	10^3 Gallons Burned	
5-02-900-06	Natural Gas	0.0	0.0	0.0	0.0	0.0	10^6 Cubic Feet Burned	
5-02-900-10	Liquified Petroleum Gas (LPG)	0.0	0.0	0.0	0.0	0.0	10^3 Gallons Burned	
SOLID WASTE DISPOSAL - INDUSTRIAL								
Incineration								
5-03-001-01	Multiple Chamber	7.0	2.5	3.0	3.0	10.0	Tons Burned	
5-03-001-02	Single Chamber	15.0	2.5	2.0	15.0	20.0	Tons Burned	
5-03-001-03	Controlled Air	1.4	1.5	10.0	NEG	0.0	Tons Burned	
5-03-001-04	Conical Design: Refuse	20.0	2.0	5.0	20.0	60.0	Tons Burned	
5-03-001-05	Conical Design: Wood Refuse	7.0	0.1	1.0	11.0	130.0	Tons Burned	
5-03-001-06	Trench Burner: Wood	13.0	0.1	4.0	0.0	0.0	Tons Burned	
5-03-001-07	Trench Burner: Tires	138.0			*6.0		Tons Burned	164
5-03-001-08	Auto Body Components	2.0	0.0	0.1	0.91	2.5	Tons Burned	
5-03-001-09	Trench Burner: Refuse	37.0	2.5		*13.3		Tons Burned	164
Open Burning								
5-03-002-01	Wood/Vegetation/Leaves	17.0	*0.0^c	*4.0^c	19.0	140.0	Tons Burned	
5-03-002-02	Refuse	16.0	1.0	6.0	30.0	85.0	Tons Burned	

---

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

SCC	Process	PART Lbs/Unit	SO_x Lbs/Unit	NO_x Lbs/Unit	VOC Lbs/Unit	CO Lbs/Unit	Units	Notes
Open Burning (Continued)								
5-03-002-03	Auto Body Components	100.0	NEG	4.0	32.0	125.0	Tons Burned	
5-03-002-04	Coal Refuse Piles[d]	*0.9	*1.1	*0.1	*0.5	*2.5	Cubic Yards of Pile	
Incineration								
5-03-005-01	Hazardous Waste	*0.3	*0.13	*0.14	*0.3	*0.5	10^6 BTU/Year Heat Input	374
5-03-005-06	Sludge	100.0	1.0	5.0	1.0	0.0	Tons Dry Sludge	
Landfill Dump								
5-03-006-01	Waste Gas Flare				*5.6		10^6 Cubic Feet Burned	314
5-03-006-02	Liquid Waste Disposal						Tons Liquid Waste Burned	
5-03-006-03	Hazardous: Fugitive Emissions						Acres of Landfill	
Liquid Waste								
5-03-007-01	General				*4		10^3 Gallons Waste Burned	136
Asbestos Removal								
5-03-009-01	General				*0.0		Tons Waste Removed	285
Auxiliary Fuel/No Emissions								
5-03-900-05	Distillate Oil	0.0	0.0	0.0	0.0	0.0	10^3 Gallons Burned	
5-03-900-06	Natural Gas	0.0	0.0	0.0	0.0	0.0	10^6 Cubic Feet Burned	
5-03-900-10	Liquified Petroleum Gas (LPG)	0.0	0.0	0.0	0.0	0.0	10^3 Gallons Burned	

*Refer to numbered notes in Appendix A or lettered notes in Appendix B; factors without asterisks are from AP-42.

APPENDIX A

FOOTNOTES FOR EMISSION FACTORS GENERATED DURING PHASE I AND PHASE II UPDATE

1. Estimates of VOC emissions taken from emission factors listed in Fugitive Emission Sources of Organic Compounds - Additional Information on Emissions, Emission Reductions, and Costs. U. S. Environmental Protection Agency. Research Triangle Park, North Carolina. EPA-450/3-82-010 (NTIS PB82-217126), April 1982. p. 2-70.

2. Equipment counts taken from Problem-Oriented Report: Frequency Occurrence for Fittings in Synthetic Organic Chemical Plant Process Units. (Prepared for U. S. Environmental Protection Agency.) Research Triangle Park, North Carolina. EPA-600/2-81-003 (NTIS PB81-141566), September 1980. Emission estimate for equipment leaks of VOC (fugitive emissions) are presented in this NAPAP listing as lbs/yr. To have an emissions estimate generated automatically (as in the NEDS inventory computer program), a production rate of unity should be used for the SCC's involving fugitive emissions from organic chemical process units. This procedure and alternate estimate techniques are presented in Appendix D of this document.

3. Based on one VOC emission factor value from State files (State A).

4. VOC emission factor estimated from Background Information for Proposed New Source Performance Standards: Steam Generators, Incinerators, Portland Cement Plants, Nitric Acid Plants, Sulfuric Acid Plants. EPA Report APTD-0711 (NTIS PB 202459), U. S. Environmental Protection Agency. 1971. p. 37-42.

5. VOC emissions were extracted from Table 5 in Source Assessment: Plastics Processing, State of the Art. U. S. Environmental Protection Agency. EPA-600/2-78-004c (NTIS PB 280926), March 1978. An emission factor of negligible has been reported for processes where no consumption of plastic is expected. A VOC factor for polyether resins was estimated based on an average of the other resin products described.

6. VOC emission factor based on the average of three emissions tests submitted by the State of Tennessee as a response to the 1986 STAPPA/ALAPCO survey.

7. This VOC emission factor was estimated from the mean of two emission factor values from State files (State A).

8. VOC emission factors estimated from "Sodium Carbonate Industry - Background Information for Proposed Standards. Draft EIS." EPA-450/3-80-029a (NTIS PB80-219678), August 1980.

Preceding page blank

9. VOC emission factors estimated from information in "A Review of Standards of Performance for New Stationary Sources - Sulfuric Acid Plants." EPA-450/3-79-003 (NTIS PB 292278), January 1979. p. 3-1 - 3-5.

10. This VOC emission factor was calculated from Tables in Polymer Manufacturing Industry - Background Information for Proposed Standards. Preliminary Draft. March 1983. p. 3.18. The emission rates for each process section were summed and this value was converted to the proper SCC units.

11. Ammonium Nitrate Manufacturing Industry - Technical Document. EPA-450/3-81-002 (NTIS PB81-152928), January 1981. Chapter 3. No VOC emissions are expected from ammonium nitrate manufacturing processes.

12. NO_x emission factor based on five values from State data (States A and E).

13. VOC emission factor estimate based on information from Docket No. A-83-29, (SOCMI Reactor Processes NSPS), Section II-D.

14. VOC emission factor from Control of Volatile Organic Compound Emissions from Air Oxidation Processes in Synthetic Organic Chemical Manufacturing Industry. EPA-450/3-84-015 (NTIS PB85-164275), December 1984. This VOC emission factor was calculated from Table C-1. The midpoint of the range was calculated and converted to the proper SCC units.

15. VOC emission factor from Urea Manufacturing Industry - Technical Document. EPA-450/3-81-001 (NTIS PB81-158925), January 1981. From Table 3-1.

16. VOC emission factor estimate based on information from Docket No. A-81-22, (SOCMI Air Oxidation Processes NSPS), Section II-D.

17. VOC emission factor from Organic Chemical Manufacturing, Volume 9: Selected Processes. EPA-450/3-80-028d (NTIS PB81-220584), December 1980. Report 6. Table IV-1.

18. VOC emission factor from Organic Chemical Manufacturing, Volume 10: Selected Processes. EPA-450/3-80-028e (NTIS PB81-220592), December 1980. Report 3. Table IV-2.

19. VOC emission factor from Organic Chemical Manufacturing, Volume 10: Selected Processes. EPA-450/3-80-028e (NTIS PB81-220592), December 1980. Report 6. Table IV-1.

20. VOC emission factor estimate calculated from Tables in Section 2 of Survey of Perchloroethylene Emission Sources. EPA-450/3-85-017 (NTIS PB85-233518/REB), June 1985. Emission factors were estimated by taking the average of VOC emissions factor values from eight plants.

21. VOC emission factor estimate calculated from Tables in Section 2 of Survey of Trichloroethylene Emission Sources. EPA-450/3-85-021 (NTIS PB86-107943), July 1985. Emission factors were estimated by taking the average of VOC emission factor values from two plants.

22. VOC emission factor values were extracted from Tables in Survey Reports on Atmospheric Emissions from Petrochemical Industry - Volume 4. Vinyl Chloride Chapter. EPA-450/3-73-005d (NTIS PB 245630), April 1974. Emissions data were collected through Industry Questionnaires in the early 1970's by the Houdry Division, Air Products and Chemicals, Inc. These emission factors should only be used in the absence of more recent source specific emissions data.

23. VOC emission factor from Organic Chemical Manufacturing, Volume 10: Selected Processes. EPA-450/3-80-028e (NTIS PB81-220592), December 1980. Report 4. Back calculated from Table V-1 to estimate uncontrolled emissions.

24. SO_x, NO_x, and VOC emission factor values were extracted from Tables in Survey Reports on Atmospheric Emissions from the Petrochemical Industry - Volume 1. Acetic Anhydride Chapter. EPA-450/3-73-005a (NTIS PB 244957), April 1974. Emissions data were collected through Industry Questionnaires in the early 1970's by the Houdry Division, Air Products and Chemicals, Inc. These emission factors should only be used in the absence of more recent source specific emissions data.

25. VOC emission factors from Table 2 in Locating and Estimating Air Emissions from Sources of Vinylidene Chloride. EPA-450/4-84-007K (NTIS PB86-117611/REB), September 1985.

26. VOC emission factor from Organic Chemical Manufacturing, Volume 10: Selected Processes. EPA-450/3-80-028e (NTIS PB81-220592), December 1980. Reports 7 and 8. Tables IV-1 and IV-2.

27. VOC emission factor from Organic Chemical Manufacturing, Volume 7: Selected Processes. EPA-450/3-80-028b (NTIS PB81-220568), December 1980. Reports 2 and 3. Tables IV-1 and IV-3.

28. VOC emission factor averaged from data presented in National Council on Air and Stream Improvement for the Pulp and Paper Industry (NCASI). Technical Bulletin 504. September 1986. They apply to dryers in the wood panelboard industry and emissions are reported as loss of carbon.

29. VOC emission factor values were extracted from Tables in Survey Reports on Atmospheric Emissions from the Petrochemical Industry - Volume 2. Cyclohexanone Chapter. EPA-450/3-73-005b (NTIS PB 244958), April 1974. Emissions data were collected through Industry Questionnaires in the early 1970's by the Houdry Division, Air Products and Chemicals, Inc. These emission factors should only be used in the absence of more recent source specific emissions data.

30. VOC emission factor from Organic Chemical Manufacturing, Volume 6: Selected Processes. EPA-450/3-80-028a (NTIS PB81-220550), December 1980. Reports 1 and 2. Tables IV-1 to IV-3.

31. VOC emission factor from Organic Chemical Manufacturing, Volume 9: Selected Processes. EPA-450/3-80-028d (NTIS PB81-220584), December 1980. Reports 4 and 5.

32. Locating and Estimating Air Emissions from Sources of Ethylene Oxide. Draft Final Report. Radian Corporation. October 1985. This VOC emission factor was calculated from Tables 6 and 7. It is the mean of two values, and assumes that control methods of inspection and maintenance are in place.

33. VOC emission factor from Organic Chemical Manufacturing, Volume 10: Selected Processes. EPA-450/3-80-028e (NTIS PB81-220592), December 1980. Report 3. Chapters III and IV.

34. VOC emission factor values were extracted from Tables in Survey Reports on Atmospheric Emissions from the Petrochemical Industry - Volume 2. Glycerin Chapter. EPA-450/3-73-005b (NTIS PB 244958), April 1974. Emissions data were collected through Industry Questionnaires in the early 1970's by the Houdry Division, Air Products and Chemicals, Inc. These emission factors should only be used in the absence of more recent source specific emissions data.

35. VOC emission factor from Organic Chemical Manufacturing, Volume 7: Selected Processes. EPA-450/3-80-028b (NTIS PB81-220568), December 1980. Report 4. Table IV-1. An emission factor of 9.2 was provided for solvent recovery, flash, and product purification distillation. No breakdown of the individual processes was provided. Therefore, this emission factor was divided evenly among the three SCC's listed.

36. VOC emission factor from Organic Chemical Manufacturing, Volume 10: Selected Processes. EPA-450/3-80-028e (NTIS PB81-220592), December 1980. Report 5. Table IV-2.

37. VOC emission factor from Organic Chemical Manufacturing, Volume 7: Selected Processes. EPA-450/3-80-028b (NTIS PB81-220568), December 1980. Report 1. Table IV-1.

38. VOC emission factor values were extracted from Tables in Survey Reports on Atmospheric Emissions from the Petrochemical Industry - Volume 2. Ethylene Chapter. EPA-450/3-73-005b (NTIS PB 244958), April 1974. Emissions data were collected through Industry Questionnaires in the early 1970's by the Houdry Division, Air Products and Chemicals, Inc. These emission factors should only be used in the absence of more recent source specific emissions data.

39. VOC emission factor values were extracted from Tables in Survey Reports on Atmospheric Emissions from the Petrochemical Industry - Volume 3. Phenol Chapter. EPA-450/3-73-005c (NTIS PB 245629), April 1974. Emissions data were collected through Industry Questionnaires in the early 1970's by the Houdry Division, Air Products and Chemicals, Inc. These emission factors should only be used in the absence of more recent source specific emissions data.

40. VOC emission factor from Organic Chemical Manufacturing, Volume 10: Selected Processes. EPA-450/3-80-028e (NTIS PB81-220592), December 1980. Report 1. Tables IV-1 through IV-3.

41. Based on two VOC emission factor values from State files (State A) and on two values taken from Docket No. A-83-29 (SOCMI Reactor Processes NSPS) Section II-D. The mean of these four values was used as this emission factor estimate.

42. VOC emission factor from Organic Chemical Manufacturing, Volume 6: Selected Processes. EPA-450/3-80-028a (NTIS PB81-220550), December 1980. Reports 5 and 6. Table IV-1. The oleum reactor was not described and was estimated to have negligible emissions based on engineering judgement.

43. VOC emission factor from Organic Chemical Manufacturing, Volume 7: Selected Processes. EPA-450/3-80-028b (NTIS PB81-220568), December 1980. Report 7. Tables IV-2 and IV-4.

44. VOC emission factor from Organic Chemical Manufacturing, Volume 9: Selected Processes. EPA-450/3-80-028d (NTIS PB81-220584), December 1980. Reports 2 and 3. The emission factor presented for compressor lube oil vent is an average of 20 model plants listed in Report 3.

45. VOC emission factor from Organic Chemical Manufacturing, Volume 9: Selected Processes. EPA-450/3-80-028d (NTIS PB81-220584), December 1980. Report 9. Tables IV-1 and IV-2.

46. VOC emission factor from Organic Chemical Manufacturing, Volume 10: Selected Processes. EPA-450/3-80-028e (NTIS PB81-220592), December 1980. Report 2. Table IV-1.

47. VOC emission factor values were extracted from Tables in Survey Reports on Atmospheric Emissions from the Petrochemical Industry - Volume 1. Adiponitrile Chapter. EPA-450/3-73-005a (NTIS PB 244957), April 1974. Emissions data were collected through Industry Questionnaires in the early 1970's by the Houdry Division, Air Products and Chemicals, Inc. These emission factors should only be used in the absence of more recent source specific emissions data.

48. VOC emission factor from Organic Chemical Manufacturing, Volume 6: Selected Processes. EPA-450/3-80-028a (NTIS PB81-220550), December 1980. Report 3. Table IV-1. No NO_x or SO_x emissions are expected based on review of the process description.

49. VOC emission factor from Organic Chemical Manufacturing, Volume 8: Selected Processes. EPA-450/3-80-028c (NTIS PB81-220576), December 1980. Reports 2 and 3. Table IV-1.

50. VOC emission factor estimated for high density polyethylene by summing the emission factors for each specific process listed. VOC emission factors for polyethylene processes - general (3-01-018-60 to 3-01-018-66) are estimates based on the average of emission factors listed for high and low density polyethylene production.

51. VOC emission factor from Organic Chemical Manufacturing, Volume 10: Selected Processes. EPA-450/3-80-028e (NTIS PB81-220592), December 1980. Report 3. Tables IV-1 and IV-2. The sum of three vents was used to estimate emissions from the distillation system condenser. Values for allyl chloride production represent the mid-point of a range of emissions provided in the document for each process.

52. VOC emission factor estimates were transferred from similar processes listed for acrylonitrile production.

53. This VOC emission factor is based on emission factor values from State files (State A). Five values were in initial sample size. This source category includes all general storage and transfer processes within the chemical manufacturing group which are uncategorized otherwise. Processes therefore may be unrelated and emissions may not be comparable. Due to extreme variance, the high and low values were deleted and the mean of the remaining three values was used.

54. VOC emission factor based on Source Test Report submitted to the U. S. Environmental Protection Agency by Washington State Department of Ecology as a response to the 1986 STAPPA/ALAPCO survey.

55. VOC emission factors for vegetable oil production have been calculated in units of lbs/ton of extractor feed cake processed rather than lbs/ton of refined oil produced. Emission data were taken from "Control of Volatile Organic Emission from Manufacture of Vegetable Oils." EPA-450/2-78-035 (NTIS PB 286307), June 1978.

56. See note 55. These VOC emission factors were calculated from Table 2-2 and Figure 2-1 of "Control of Volatile Organic Emissions from Manufacture of Vegetable Oils." EPA-450/2-78-035 (NTIS PB 286307). The factors for the four different seed types were averaged and this number was divided among the different processes as outlined in Figure 2-1.

57. VOC emission factor from Organic Emissions from Ferrous Metallurgical Industries: Compilation of Emission Factors and Control Technologies. EPA-600/2-84-003 (NTIS PB84-141548), January 1984. Emission factors are expressed as total organic emissions which may overestimate VOC emissions. Tables 4-4 and 5-5.

58. Personal communication with Al Vervaert of EPA/OAQPS/ESED. January 1986. Metals-oriented hot processes are considered to have negligible VOC emissions.

59. VOC emission factor from Organic Emissions from Ferrous Metallurgical Industries: Compilation of Emission Factors and Control Technologies. EPA-600/2-84-003 (NTIS PB84-141548), January 1984. Emission factors are expressed as total organic emissions which may overestimate VOC emissions. Table 6-3.

60. VOC emission factor for dryers was transferred from factors listed for dryers in other mineral product industries. This factor is based on a direct-fired dryer burning natural gas.

61. VOC emissions are estimated to be negligible. Small amounts of VOC may contribute to odor problems, particularly in wet manure. Compounds which give rise to the odor are organic acids, methylmercaptans, ammonia, and amines; however, total VOC's have not been quantified. (Personal communication with University of Georgia and Texas A&M University, Agricultural Extension Offices. April 21, 1987.)

62. Based on the mean of seven VOC emission factor values provided for crude oil sumps from State files (State A). This emission factor estimate was transferred to crude oil pits as a best estimate for VOC.

63. Based on the mean of three VOC emission factor values from State files (State A).

64. VOC emission factor from Locating and Estimating Air Emissions from Sources of Ethylene Oxide. Draft Final Report. Radian Corporation. October 1985. p. 53-55.

65. Based on the mean of five VOC emission factor values from State files (State A). This source category includes a variety of adhesive coating application processes which may not be comparable. The values listed in the State files are highly variable and this emission factor estimate has been rounded to the nearest hundred. It is an approximation which should be used only in the absence of specific emissions data.

66. Based on the mean of 12 VOC emission factor values from State files (State A). This source category includes a variety of adhesive coating application processes which may not be comparable. The values listed in the State files are highly variable and this emission factor estimate has been rounded to the nearest whole number. It is an approximation which should be used only in the absence of specific emissions data.

67. Based on the average of 296 VOC emission factor values from State files (States A, D, and E) rounded to the nearest hundred. This source category includes all general coating oven operations. Processes may vary widely between different plants. Data are highly variable and this emission factor is an approximation which should be used only in the absence of specific emissions data.

68. Based on the mean of 25 VOC emission factor values from State files (States A and D). Emissions from State D are reported as total hydrocarbons and may overestimate VOC's.

69. Based on 14 VOC emission factor values from State files (State A). This source category includes fugitive emissions from various surface coating operations where processes may not be comparable. Due to extreme variability, the high and low values were dropped and the mean of the remaining 12 values was used as an emission factor estimate.

70. VOC emissions from inorganic chemical manufacturing and storage is expected to be zero using engineering judgement.

71. VOC emission factor based on nine VOC emission factor values from State files (State A). This source category includes storage of various petroleum liquids. The emission factor is an approximation which should be used only in the absence of specific emissions data.

72. Personal communication with Mr. William Thomas (Florida Department of Natural Resources, Southwest District office). Mr. Thomas is not aware of any VOC testing ever having been done in the phosphate industry, but feels there are small amounts of VOC's emitted from the phosphate rock processing. Mr. Thomas also felt that there are no SO_x emissions from phosphoric acid manufacturing processes.

73. VOC emission factors were calculated using equations from Section 4.3 of AP-42 dated September 1985. The same assumptions were used as those from Table 4.3-4 on page 4.3-15 of the AP-42 Third Edition, dated April 1977. Values smaller than 10^{-4} were considered negligible and entered into the Table as 0.0.

74. SO_x emission factor was estimated using technology transfer from oil-fired process heaters in other industries, assuming that the dryers burn oil. Emissions are from the combustion source only.

75. VOC emission factors estimated through technology transfer from similar fiber production, based on information in: Industrial Process Profiles for Environmental Use: Chapter 11. The Synthetic Fiber Industry. EPA-600/2-77-023k, February 1977. The factor for aramids was transferred from polyamides. The factor for polyesters was transferred from acrylics based on similarities in the physical properties of the fibers.

76. VOC emissions are estimated to be negligible from the process description. Personal communication with the American Foundrymen's Society. April 27, 1987. There may be some VOC's from the solid process, but the shell process predominates. Combustion temperatures are very high (greater than 1000°F) and complete combustion is expected.

77. Emission factor is an average based on less than five VOC values obtained from responses to Section 114 letters for the methylene chloride NESHAP.

78. Emission factor based on a single VOC value obtained from a response to a Section 114 letter for the methylene chloride NESHAP.

79. Emission factors transferred from kraft mill processes. Personal communication with Mr. Bill Fuller, Oregon Department of Environmental Quality. April 17, 1987.

80. Personal communication with Mr. Lee Gribovich, Wyoming Division of Air Quality. January 1987. No test data are available on VOC's from fuel-fired equipment in the sodium carbonate industry. Only the calciners and the rotary dryer (if direct-fired) are expected to have any SO_x, NO_x, or VOC's. Mr. Gribovich provided SO_x and NO_x data for the coal-fired calciner (two of six plants).

81. VOC emission factor transferred from other sintering processes which are similar based on the descriptions given in AP-42 (8.8.1). Clay/coke may produce higher VOC's due to the presence of the coke.

82. SO_x and NO_x emission factor values were extracted from Tables in Survey Reports on Atmospheric Emissions from the Petrochemical Industry - Volume 1. EPA-450/3-73-005a (NTIS PB 244957), April 1974. Emissions data were collected through Industry Questionnaires in the early 1970s by the Houdry Division, Air Products and Chemicals, Inc. These emission factors should only be used in the absence more recent source specific emissions data.

83. Emission factor based on a single VOC value on information from Docket No. A-80-25, (SOCMI Distillation Operations NSPS) Section II-D.

84. VOC emission factor is an average of three values obtained from total hydrocarbon emissions testing of a cupola furnace (Site MET-A). Draft Final Test Report, National Dioxin Study. Tier 4: Combustion Sources. Prepared for U. S. Environmental Protection Agency. Research Triangle Park, North Carolina. January 10, 1986. pp. 5-6, 5-13, and 5-15.

85. VOC emission factor based on the mean of less than five VOC values obtained from NEDS User Point File Data Selection Report. March 27, 1986.

86. Reference 85, based on the mean of five to nine VOC values.

87. Reference 85, based on the mean of 10 to 15 VOC values.

88. Reference 85, based on one VOC value.

89. VOC emissions are expected to be negligible based on a review of the process description provided in "Kirk Othmer Concise Encyclopedia of Chemical Technology, Phosphorus and the Phosphides." John Wiley and Sons, Inc. 1985. Elemental phosphorus is produced in a one-step process in an electric furnace. Carbon monoxide is the pollutant of concern in this process.

90. VOC emissions from material handling and preparation for calcining are estimated to be zero based on engineering judgement. Emissions from the actual calcining process are included under each specific material source category (gypsum, lime, etc.).

91. Emission factors listed for coating oven heaters are based on emissions from the combustion source only. Emissions from the solvents and coatings are included in the factors for coating ovens, general (4-04-008).

92. VOC emission factor estimates for the single chamber incinerator were calculated using the ratio of emissions from single versus multiple chamber incinerators listed for solid waste disposal. VOC emission factors for brake shoe debonding were transferred from those listed for electrical windings reclamation assuming that they have similar phenolic resin components. SO_x emission factor was transferred from those listed for incineration of industrial solid waste (5-03-001).

93. SO_x and NO_x emission factors based on the average of four emission tests submitted by companies to JACA Corporation. Summary information in: Listing of Iron and Steel Stack Test Reports. September 1986 UPDATE. Prepared under EPA Contract No. 68-02-3962 by JACA Corporation.

94. SO_x emission factors based on the average of four emission tests submitted by companies to JACA Corporation. Summary information in: Listing of Iron and Steel Stack Test Reports. September 1986 UPDATE. Prepared under EPA Contract No. 68-02-3962 by JACA Corporation.

95. VOC emission factor based on a test report submitted by a company to JACA Corporation. Emissions were reported as total organics and may be an overestimate of VOC. Summary information in: Listing of Iron and Steel Stack Test Reports. September 1986 UPDATE. Prepared under EPA Contract No. 68-02-3962 by JACA Corporation.

96. NO_x emission factor based on the average of three emission tests submitted by a company to JACA Corporation. Summary information in: Listing of Iron and Steel Stack Test Reports. September 1986 UPDATE. Prepared under EPA Contract No. 68-02-3962 by JACA Corporation.

97. SO_x emission factor based on the average of three emission tests submitted by companies to JACA Corporation. Summary information in: Listing of Iron and Steel Stack Test Reports. September 1986 UPDATE. Prepared under EPA Contract No. 68-02-3962 by JACA Corporation.

98. VOC emissions from Petroleum Refinery Wastewater Systems - Background Information Document for Proposed Standards. EPA-450/3-85-001a. February 1985. p. 3-53. The emission factor presented is for an uncovered dissolved air floatation (DAF) unit and represents the worst case for additional treatment. If an induced air floatation (IAF) unit is used, an emission factor of 0.01 lb/10^3 gallons wastewater should be used.

99. Reference 98, p. 3-57. The VOC emission factor presented is for an uncovered dissolved air floatation (DAF) unit and represents the worst case for additional treatment. If an induced air floatation (IAF) unit is used, an emission factor of 0.20 lb/10^3 BBLs refinery feed should be used.

100. VOC emission factor estimate is an average based on six values, from Table 3-3, Survey of Carbon Tetrachloride Emission Sources (NESHAP). EPA-450/3-85-018 (NTIS PB85-221661/REB), July 1985. The value is based on total fugitive emissions of CCl_4 via the hydrocarbon chlorinolysis process. A value of 23,800 lbs/year is obtained based upon a mean of six values via the hydrochlorination/direct chlorination process.

101. VOC emission factor estimate is an average based on 11 values calculated from Table 2-6. Memo from Kuhn, K. Q. and R. A. Wassel to Butadiene Source Category Concurrence File, Estimates of 1,3-Butadiene Emissions From Production Facilities with Additional Controls. March 25, 1986.

102. Emission factors are based on emission tests submitted by companies to JACA Corporation. Summary information in: Listing of Iron and Steel Stack Test Reports. September 1986 UPDATE. Prepared under EPA Contract No. 68-02-3962 by JACA Corporation. VOC and SO_x emission factors are the average of three test results. NO_x emission factor based on one test.

103. VOC and NO_x emission factor from Organic Chemical Manufacturing, Volume 6: Selected Processes. EPA-450/3-80-028a (NTIS PB81-220660), December 1980. Report 7. Table IV-1. Based on uncontrolled emissions from a model plant. Drying and cooling of adipic acid create primarily particulate matter emissions.

104. VOC emission factor based on the average of two numbers reported in Organic Chemical Manufacturing, Volume 8: Selected Processes. EPA-450/3-80-028c (NTIS PB81-220576), December 1980. Report 4. The product recovery column is synonymous with the distillation column vent.

105. VOC emission factor from Organic Chemical Manufacturing, Volume 10: Selected Processes. EPA-450/3-80-028e (NTIS PB81-220592), December 1980. Report 9. p. IV-2. The factor presented for methyl ethyl ketone production is based on number for four different processes.

106. VOC emission factor from Organic Chemical Manufacturing, Volume 6: Selected Processes. EPA-450/3-80-028a (NTIS PB81-220550), December 1980. Report 5. pp. IV-1 to IV-4.

107. VOC emission factor for kilns was transferred from factors listed for the lime manufacturing industry. Emissions are from the combustion source and it was assumed that the kiln is direct-fired burning natural gas. A 98 percent combustion efficiency was assumed.

108. VOC emission factor from Organic Chemical Manufacturing, Volume 7: Selected Processes. EPA-450/3-80-028b (NTIS PB81-220568), December 1980. Report 6. pp. IV-1 to IV-3. NO_x emissions are expected to be zero based on a review of the raw materials and process description.

109. NO_x emission factor value was extracted from Tables in Survey Reports on Atmospheric Emissions from the Petrochemical Industry - Volume 2. EPA-450/3-73-005b (NTIS PB244958), April 1974. Emissions data were collected through Industry Questionnaires in the early 1970s by the Houdry Division, Air Products and Chemicals, Inc. These emission factors should only be used in the absence of more recent source specific emissions data.

110. VOC emission factor from Synthetic Fiber Production - Background Information for Proposed Standards. EPA-450/3-82-011a (NTIS PB83-153015), March 1982. Factors for dope preparation and fiber extrusion were estimated using engineering judgement and review of emission factors listed for similar processes in plastics production industry.

111. VOC emission factor from Synthetic Fiber Production - Background Information for Proposed Standards. EPA-450/3-82-011a (NTIS PB83-153015), March 1982. Table C-8. The emission factor reported is the average of five plant types.

112. VOC emission factor is the sum of emission factors for three processes: washing, drying, and finishing. Washing emission factor is the average of three plant values from Synthetic Fiber Production - Background Information for Proposed Standards. EPA-450/3-82-011a (NTIS PB83-153015), March 1982. Table C-8. Drying and finishing emission factors are the average of values listed on the above table and that of Table 17 in Source Assessment: Cotton and Synthetic Woven Fabric Finishing. EPA-600/2-80-042a (NTIS PB81-161937), February 1980.

113. VOC emission factor is the average of five plant types from Synthetic Fiber Production - Background Information for Proposed Standards. EPA-450/3-82-011a (NTIS PB83-153015), March 1982. pp. 6-16, 6-23, 6-28, 6-34, and 6-40.

114. VOC emission factors estimated from process descriptions provided in Industrial Process Profiles for Environmental Use: Chapter 9. The Synthetic Rubber Industry. EPA-600/2-77-023i (NTIS PB 281480/4), February 1977. The monomer is stored in pressure tanks and emissions are expected to be negligible. Emissions from the steam stripper are sent to a recovery system and under normal operations should be negligible.

115. SO_x emission factor from Multimedia Pollution Assessment of the Wood Products Industries (Final Report). EPA-600/2-81-008 (NTIS PB84-160266), February 1984. Table 55.

116. SO_x emission factor from Multimedia Pollution Assessment of the Wood Products Industries (Final Report). EPA-600/2-81-008 (NTIS PB84-160266), February 1984. Page 144 indicates neutral sulfite semi-pulp and sulfite pulp should have similar values for this process. This value is listed under sulfite pulping for MgO systems.

117. VOC emission factor from Textile Dyes and Dyeing Equipment: Classification Properties and Environmental Aspects (Final Report). EPA-600/2-85-010 (NTIS PB85-173771/REB), February 1985. Table 54.

118. VOC emission factor based on the average of eight stack tests. From Source Assessment: Cotton and Synthetic Woven Fabric Finishing. EPA-600/2-80-042a (NTIS PB81-161937), January 1980. Table B-5.

119. VOC emission factors from Source Category Survey: Refractory Industry. Chapter 5. EPA-450/3-80-006 (NTIS PB81-111445), March 1980. Value reported is for total hydrocarbon and may overestimate VOC emissions.

120. SO_x emission factor based on one emission test from State files (State H).

121. NO_x and SO_x emission factor estimate based on reported emissions from industry test results taken from State files (State H).

122. SO_x emission factor based on one value from State files (State D).

123. VOC emission factor based on reported emissions from industry test results taken from State files (State H).

124. NO_x and SO_x emission factors based on the average of three emission tests from State files (State D). VOC emission factor based on two values from State files (State D). VOC emissions are reported as total hydrocarbons and may overestimate VOC's.

125. VOC emission factor from Organic Chemical Manufacturing, Volume 6: Selected Processes. EPA-450/3-80-028a (NTIS PB81-220550), December 1980. Report 4. Table IV-1. No NO_x or SO_x emissions are expected based on a review of the raw materials and process description.

126. VOC emissions are estimated from AP-42 (6.6-3) and "Modern Pollution Control Technology," Volume 1, 1973, by the Research and Education Association, New Mexico. Steam tube dryer emissions will be primarily from the fish; VOC emission factor is transferred from stale fish cookers. Direct-fired dryer emissions are from both the fish and combustion products; VOC emission factor is the sum of emission factors from fish cookers and residential furnaces and domestic/commercial boilers with natural gas or distillate oil averaged. These factors should only be used in the absence of better data.

127. VOC and NO_x emission factors are estimated to be negligible for electric induction furnaces because the metal must be clean and dry if it is to be charged to this type of furnace. SO_x emission factor was transferred from 3-04-002-24.

128. SO_x emission factor based on one value from State files (State F).

129. Emission factors for all process heaters were transferred from the emission factors calculated for process heaters in the oil and gas production source category. Assuming that emissions from process heaters are dependent on the type of fuel burned rather than on the material being heated, the emission factors have been transferred to other industries.

130. VOC emission factors for incinerators and flares were estimated assuming 98 percent combustion efficiencies, which is currently accepted as achievable by EPA, in its standards development activities. Speciated composites for ten natural gas samples were obtained from "Emissions from Refinery Process Heaters Equipped with Low-NO_x Burners" (KVB11-6019-1274), prepared by KVB, Inc., Research and Analyses Division under EPA Contract No. 68-02-2645, March 1981 and "NO_x Emissions from Petroleum Industry Operations," (API Publication No. 4311), prepared by American Petroleum Institute, October 1979. The calculated emission factor for natural gas-fired incinerators represents an estimate which should be used only in the absence of specific emissions data. There is great variability in the operating parameters of incinerators (i.e., temperature, residence time) which should be considered in applying these emission factor estimates.

VOC emission factors for oil-fired and process gas-fired incinerators were estimated from emission factors presented for oil-fired process heaters because no "typical" speciated profiles were obtained for oil process gas. The ratio of emissions from gas-fired incinerators to emissions from gas-fired process heaters was applied to the other fuel-fired heaters to obtain emission factor estimates for incinerators. The estimated VOC emission factors for incinerators and flares were transferred to other industries assuming that the emissions from these combustion sources are dependent on the type of fuel burned, rather than on the material being heated or burned.

131. NO_x emission factor based on the mean of two emission tests from State files (State I).

132. SO_x emission factor based on the mean of nine emission tests from State files (States D and I).

133. SO_x emission factor based on the mean of two emission tests from State files (State I).

134. Emission factors based on data from State files. SO_x emission factor based on the mean of two values. VOC emission factor based on one value. NO_x emission factor based on the mean of two values. (Data from States D and I). State D reports VOC's as total hydrocarbon which may overestimate VOC's.

135. NO_x and SO_x emission factors based on data from State files. NO_x emission factor is the mean of two values. SO_x emission factor is based on one value. (Data from States D and I).

136. VOC emission factor based on one to two values from State files (State I).

137. NO_x emission factor based on the mean of five emission tests from State files (State I).

138. VOC and NO_x emission factors based on the mean of three values from State files (States D and E). VOC emissions are reported as total hydrocarbons and may overestimate VOC's. SO_x emission factor based on two values.

139. SO_x and NO_x emission factors based on one emission test from State files (State I). VOC emission factor was estimated through technology transfer from other coal burning boilers using engineering judgement.

140. SO_x and VOC emission factors based on one value for each pollutant from State files (State D). VOC emissions are reported as total hydrocarbons and may overestimate VOC's.

141. NO_x emission factor based on one value from State files (State D).

142. Personal communication with one industry representative. VOC emissions should be constant throughout and are determined by the reactor at the beginning of the process. VOC emission factor is therefore based on seven values for the industry from State files (States A and D). Values from State D represents total hydrocarbons and may overestimate VOC's.

143. VOC emission factor based on the mean of two to four values from State files (State D). Emissions are reported as total hydrocarbons and may overestimate VOC's.

144. VOC emission factor based on the mean of five to nine values from State files (State D). Emissions are reported as total hydrocarbons and may overestimate VOC's.

145. NO$_x$ emission factor based on the mean of 10 to 20 values from State files (State D).

146. SO$_x$ emission factor based on the mean of two to four values from State files (State D).

147. NO$_x$ emission factor based on the mean of five to nine values from State files (State D).

148. Emission factors based on information from State files. SO$_x$ emission factor is the average of seven values. NO$_x$ emission factor is the average of 72 values. VOC emission factor is the average of 12 values (State D). VOC emissions are reported as total hydrocarbons and may overestimate VOC's.

149. NO$_x$ emission factor based on two to four values from State files (State D).

150. VOC emission factor based on one value from State files (State D). Emissions are reported as total hydrocarbons and may overestimate VOC's.

151. VOC emission factor based on personal communication with Mr. Andy Caron, National Council for Air and Stream Improvement for the Pulp and Paper Industry (NCASI). January 1987. Data were specific to the MgO process, measured at the acid tank exit, however, Mr. Caron thought that similar levels would be found at any acid plant. In the absence of better data, this figure is supplied as an approximation.

152. VOC emission factors based on information from the National Council on Air and Stream Improvement for the Pulp and Paper Industry (NCASI) Technical Bulletin #371, May 1982. Data are in units of total gaseous non-methane organics used as best estimate of VOC's.

153. VOC emission factors based on information from the National Council on Air and Stream Improvement for the Pulp and Paper Industry (NCASI) Technical Bulletin #358, September 1981. Data are in units of total gaseous non-methane organics used as best estimate of VOC's.

154. VOC emission factors based on information from the National Council on Air and Stream Improvement for the Pulp and Paper Industry (NCASI) Technical Bulletin #112, February 1981. Emissions were measured after an electrostatic precipitator and an induced fan draft. Values are reported as total gaseous non-methane organics.

155. SO_x and NO_x emission factor values were extracted from Tables in Survey Reports on Atmospheric Emissions from the Petrochemical Industry - Volume 4. EPA-450/3-73-005d (NTIS PB 245630), April 1974. Emissions data were collected through Industry Questionnaires in the early 1970's by the Houdry Division, Air Products and Chemicals, Inc. These emission factors should only be used in the absence of more recent source specific emissions data.

156. SO_x and NO_x emission factor values were extracted from Tables in Survey Reports on Atmospheric Emissions from the Petrochemical Industry - Volume 2. EPA-450/3-73-005b (NTIS PB 244958), April 1974. Emissions data were collected through Industry Questionnaires in the early 1970's by the Houdry Division, Air Products and Chemicals, Inc. These emission factors should only be used in the absence of more recent source specific emissions data.

157. These VOC emission factors were calculated from emission factors reported for 4-01-002-01 through 4-01-002-07. Unit conversions were made using information on specific gravities for different solvents from Table 10 of Source Assessment: Solvent Evaporation - Degreasing Operations. EPA-600/2-79-019f (NTIS PB80-128812), August 1979.

158. NO_x and VOC emission factors extracted from Table 5-7 in Source Category Survey: Mineral Wool Manufacturing Industry. EPA-450/3-80-016 (NTIS PB80-202781), March 1980. An emission factor of negligible is listed where no emissions were reported in this document.

159. Information from "Source Category Survey: Perlite Industry" indicate that SO_x, NO_x, and VOC emissions from this industry are negligible. Chapter 5. EPA-450/3-80-005 (NTIS PB80-194822), May 1980.

160. No emissions are expected based on information from Source Category Survey: Ceramic Clay Industry. Chapter 1. EPA-450/3-80-017 (NTIS PB80-227507), March 1980.

161. Negligible amounts of NO_x and VOC emissions are expected from thermal process phosphoric acid plants. Information from Source Category Survey: Thermal Process Phosphoric Acid Manufacturing Industry. EPA-450/3-80-018 (NTIS PB80-193469), May 1980. Chapter 5.

162. VOC emission factors were transferred from that listed for 3-05-014-02. According to process descriptions and emissions described in "Glass Manufacturing Plants - Background Information for Proposed Standards of Performance," the melting furnaces are the same and hydrocarbon emissions should be independent of the type of glass produced. EPA-450/3-79-005a (NTIS PB 298528/1), June 1979. Chapter 3.

163. VOC emission factor estimated from personal communication with the South Coast Air Quality Management District, California. March 31, 1987. VOC emission factor is based on AP-42 information for reduction cookers and is therefore only an estimate of hydrocarbons.

164. VOC emissions factors from "The Effects of the Operating Variables and Refuse Types on the Emissions from a Pilot Scale Trench Incinerator." John O. Burckle, National Center for Air Pollution Control. Fairfax Facility, Cincinnati, Ohio. Paper was prepared for presentation at the 1968 National Incinerator Conference, May 5-8, 1968 in New York City and publication in the proceedings of the conference. SO_x and NO_x data were measured but not reported.

165. Benzene emissions from Maleic Anhydride Industry - Background Information for Proposed Standards. Draft EIS, February 1980. NO_x calculation based on data from one plant. Sample was taken at exit of incineration after product recovery absorber, using EPA Method #7.

166. VOC emission factor based on the mean of two values from State permit files (States E and K).

167. VOC and NO_x emission factor based on one value from State permit files (State K).

168. VOC, NO_x, and SO_x emission factors based on one value from State permit files (State K). The VOC and SO_x factors listed for the general categories (3-01-043-01) were transferred to those listed in each specific process.

169. VOC, NO_x, and SO_x emission factor based on the average of five values from State permit files (State K).

170. VOC, NO_x, and SO_x emission factor based on two reported values from State permit files (State K).

171. NO_x and SO_x emission factor based on the average of two values from State permit files (State K).

172. Personal communication with Mr. Victor Dallons, National Council on Air and Stream Improvement for the Pulp and Paper Industry (NCASI). January 1987. The emissions from these processes are usually vented and burned, either at the recovery furnace, the lime kiln, or an auxiliary system; therefore, only fugitive emissions would be found at these sources.

173. Personal communication with Mr. Bill Fuller, Oregon Department of Environmental Quality. January 26, 1987. NO_x emission factor from National Council on Air and Stream Improvement for the Pulp and Paper Industry (NCASI) Technical Bulletin #105, December 1977. SO_x emission factor from three monitoring data figures (1978-1986) averaged.

174. Personal communication with Mr. Victor Dallons, National Council on Air and Stream Improvement for the Pulp and Paper Industry (NCASI). January 1987. Mr. Dallons felt that veneer dryers would overestimate the VOC emissions; however, he was not aware of any data generated in this industry. Numbers are from NCASI Technical Bulletin #405, August 1983. The coe dryer is assumed to be a steam-heated type of dryer. Units are in lbs $CH_4/10^4$ square feet as best estimate of VOC's.

175. Personal communication with Mr. Victor Dallons, National Council on Air and Stream Improvement for the Pulp and Paper Industry (NCASI). January 1987. Mr. Dallons felt that in the absence of other data (he was not aware of any generated in this industry), particleboard pressing might approximate the VOC emissions, NCASI Technical Bulletin #493, June 1986.

176. SO_x emission factor based on the average of five test values from State files (State C).

177. SO_x emission factor based on the average of 11 test values from State files (State C).

178. VOC emission factors based on information from EPA Guideline Series: Control of Volatile Organic Compound Emissions from Manufacture of High-Density Polyethylene, Polypropylene, and Polystyrene Resins. EPA-450/3-83-008 (NTIS PB84-134600), November 1983. Figures are based on emissions from a model plant which are flared at exit as a means of control. Conveying = closed loop drying system. Storage = polymer fluff storage and mixers.

179. VOC emission factor based on information from EPA Guideline Series: Control of Volatile Organic Compound Emissions from Manufacture of High-Density Polyethylene, Polypropylene and Polystyrene Resins. EPA-450/3-83-008 (NTIS PB84-134600), November 1983. Figure is based on emissions from a model plant and is a combination of two sources: the devolatilizer condenser vent, and the styrene recovery unit condenser vent.

180. VOC emission factor estimates are based on information from "Rubber Tire Manufacturing Industry - Background Information for Proposed Standards." Draft EIS. EPA-450/3-81-008a (NTIS PB83-163543), July 1981. Approximately 90 percent of the solvent applied to the rubber during tire manufacturing evaporates within 30 seconds. For green tire spraying, approximately 8 percent of the VOC's applied to the rubber are absorbed and the other 92 percent evaporates. In the absence of test data, emission factor estimates were generated using these percentages. Swabbing is a similar process to dipping. Solvent storage is considered negligible based on engineering judgement.

181. VOC emission factor based on information from "Industrial Process Profiles for Environmental Use: Chapter 25. Primary Aluminum Industry." EPA-600/2-77-023y (NTIS PB 281491/1), February 1977. p. 22. Hydrocarbon emissions are estimated to be 0.025 to 0.075 percent of the aluminum produced. The mid-point of this percentage was used to calculate an estimated VOC emission factor.

182. SO_x, NO_x, and VOC emissions are assumed to be zero based on information from "Industrial Process Profiles for Environmental Use: Chapter 29. Primary Copper Industry." EPA-600/2-80-170 (NTIS PB81-164915), July 1980. p. 94. The only pollutant emitted to the air by an electrolytic refinery is a fine sulfuric acid.

183. SO_x, NO_x, and VOC emission factors based on information from "Industrial Process Profiles for Environmental Use: Chapter 24. The Iron and Steel Industry." EPA-600/2-77-023x (NTIS PB 266226/0), February 1977. p. 116. The only atmospheric emissions occurring during this process are acid fumes.

184. NO_x emission factor was transferred from that listed for cupolas in gray iron foundries (3-04-003-01).

185. VOC emission factor was transferred from 3-04-009-01 (annealing for malleable iron foundry), based on process descriptions from "Organic Emissions from Ferrous Metallurgical Industries: Compilation of Emission Factors and Control Technologies." EPA-600/2-84-003 (NTIS PB84-141548), January 1984. p. 5-25 to 5-33.

186. VOC emission factors based on information from "Organic Emissions from Ferrous Metallurgical Industries: Compilation of Emission Factors and Control Technologies." EPA-600/2-84-003 (NTIS PB84-141548), January 1984. p. 6-8. Emissions from transfer, cooling, grinding, and packaging of the produced alloy are expected to contain very little, if any, organic components.

187. SO_x, NO_x, and VOC emission factors were transferred from 3-04-001-04 (Fluxing, Chlorination). According to AP-42 Fourth Edition, Section 7.8 (April 1981), "emissions from reverberatory (fluorine) smelting/refining are similar to those from reverberatory (chlorine) smelting/refining."

188. VOC emission factor for charging was transferred from 3-03-009-16 (Charging: BOF). Emissions during charging should be independent of the type of furnace to which the charge is delivered.

189. SO_x emission factor calculated from information in "Industrial Process Profiles for Environmental Use. Chapter 27: Primary Lead Industry." EPA-600/2-80-168 (NTIS PB81-110926), July 1980. p. 42-43. SO_x emissions were reported as a volume-percent with a given flowrate. Using an assumed density of $SO_2 = 0.61\ Kg/m^3$ and a production rate supplied by Table 24, the factor was calculated.

190. SO_x, NO_x, and VOC emissions are expected to be zero based on information from "Industrial Process Profiles for Environmental Use. Chapter 27: Primary Lead Industry." EPA-600/2-80-168 (NTIS PB81-110926), July 1980. p. 64.

191. NO_x, SO_x, and VOC emissions from materials crushing and handling are expected to be zero based on process descriptions in "Metallic Mineral Processing Plants: Background Information for Proposed Standards, Volume 1." EPA-450/3-81-009a (NTIS PB83-113746), August 1982. Chapter 3.

192. These SO_x, NO_x, and VOC emission factors were transferred from 3-05-020-01 to 3-05-020-04 (Crushing and screening of stone quarrying), from 3-05-025-10 to 3-05-025-11 (Crushing and screening of sand and gravel), and 3-05-040-21 to 3-05-040-31 (Conveying, crushing, and screening in the mining of nonmetallic minerals).

193. SO_x emission factor based on reported emissions from State files (State G) and production rates given by industries. This emission point is for bronze melting in induction furnaces and would be similar for electric arc furnaces.

194. SO_x, NO_x, and VOC emission factors based on the annual usage of core oil, sand, and amount of cores produced provided by industries in State G. The assumption made was that the core oil burned completely off of the core and behaved the same as combusted fuel oil used in an industrial boiler. Based on information from "Environmental Assessment of Coal- and Oil-Firing in a Controlled Industrial Boiler; Volume II. Comparative Assessment," EPA-600/7-78-164b (NTIS PB 289941/7). Tables 4-3 and 4-6. These emission factors were used for core ovens in iron foundries and steel foundries.

195. VOC emission factors transferred from 3-03-008-20 and 3-03-008-21 (Sinter transfer and unloading). Since no VOC emissions are expected from sinter transferring and unloading, it was assumed that no VOC emissions should result from transferring of charge materials or raw materials.

196. VOC, NO_x, and SO_x emission factors were transferred from similar operations in the gray iron foundry industry, based on information about the processes from "Organic Emissions from Ferrous Metallurgical Industries: Compilation of Emission Factors and Control Technologies" EPA-600/2-84-003 (NTIS PB84-141548), January 1984. Emission factors are expressed as total organic emissions which may overestimate VOC's.

197. SO_x emission factor based on reported emissions from State files (State G) and production rates provided by industries.

198. VOC emission factor transferred from 3-03-008-11 (Raw material stockpiles) which is considered a similar process description.

199. These SCC's have been added to NEDS for particulate emissions only. SO_x, NO_x, and VOC emissions, which are products of combustion, are considered under the SCC's for the actual process listed.

200. Emission factors were based on data taken from "Source Category Survey for the Acrylonitrile Industry" (Draft), prepared by Energy and Environmental Analysis, Inc. for the U. S. Environmental Protection Agency. July 1981. The data were provided by industry with some storage and fugitive emission figures missing. This estimate represents acrylonitrile emissions only.

201. NO_x and SO_x emission factors based on data from State files (State E). SO_x value is the average of two reported values and NO_x value is the average of five values.

202. VOC emission factor is an estimate using technology transfer from similar processes listed for beer production. VOC emission factors for fermentation tanks are an estimate based on the average of the two factors listed for fermentation of wines, brandy, and brandy spirits.

203. SO_x emission factor based on the mean of three values from State files (State E).

204. NO_x emission factors are based on data from State files (State E). NO_x emission estimates were reported for three SCC's in this source category. The emission factor was then transferred to the other SCC's with the assumption that NO_x emissions are independent of the present conversion of sulfuric acid.

205. SO_x, NO_x, and VOC emission factors based on one value from State files (State E).

206. NO_x and VOC emission factors for waste handling of acetylene are the average of three values from State files (State E). Negligible VOC emissions are expected from material handling, grinding, and mixing based on process descriptions provided by Agency personnel in State E.

207. VOC emission factor based on one value from State files (State E).

208. SO_x and NO_x emission factors are the average of two values from State files (State E).

209. NO_x emission factor based on one value submitted from State files (State E).

210. SO_x emission factor based on one value submitted from State files (State E).

211. SO_x emission factor is the average of four values from State files (State E).

212. NO_x emission factor is the average of 58 values from State files (States D and E).

213. Personal communication with Mr. Harry Kelly, Montana Air Bureau. February 1987. Engineering estimation methods were used to derive figures. Emissions are from the fuel used in the boilers and dryer of the one facility in Montana. They estimate VOC's are not zero, but no data are available.

214. Personal communication with Mr. Al Carlucci, Erie County Regional Office, New York. February 1987. Production data and solvent use data are from one plant. Solvent mixing is an estimated figure. Emission factor is also based on data provided by the State (State G) and is for total hydrocarbon emissions as the best estimate of VOC's.

215. Atmospheric emissions from breathing losses from underground storage tanks are considered negligible. Information from "Underground Storage Tanks: Problems, Technology and Trends" by Paul H. Woods, Jr. and Dale E. Webster, Pollution Engineering, July 1984 and "Underground Tank Management" by Paul V. Knopp, Pollution Engineering, September 1985. VOC emission factors for working losses from underground storage tanks were calculated using correlations in AP-42 Fourth Edition, Section 4.4-5, assuming an ambient temperature of 60°F.

216. NO_x and SO_x emission factors were transferred from 3-05-001-01 to 3-05-001-04. VOC emission factor for blowing was calculated from averaging eight results from emissions tests reported in "Asphalt Roofing Manufacturing Industry: Background Information for Proposed Standards." EPA-450/3-80-021a (NTIS PB80-212111), June 1980. (Appendix C.) VOC emission factors for dipping and spraying were transferred from 3-05-001-03 and 3-05-001-04, based on information about the processes provided in the above document (Chapter 3).

217. SO_x emission factor estimate was calculated using feed and production rates presented in "Level 1 Assessment of Uncontrolled Sinter Plant Emissions." EPA-600/2-79-112 (NTIS PB 298005/5), May 1979. Profiles listing typical quantities of sulfur in feed coke were obtained from "Applicability of Coke Plant Control Technologies to Coal Conversion." EPA-600/7-79-184 (NTIS PB80-108954), August 1979. p. 35. SO_x emission factor was calculated assuming all sulfur is converted to SO_2.

218. SO_x emission factor was calculated from information contained in "Industrial Process Profiles for Environmental Use, Chapter 28: Primary Zinc Industry." EPA-600/2-80-169 (NTIS PB80-225717), July 1980. p. 53. SO_2 emissions are given in ppm, along with flow rates and temperatures of carrier gas and the density of SO_2.

219. SO_x and VOC emission factors based on information contained in "Industrial Process Profiles for Environmental Use, Chapter 28: Primary Zinc Industry." EPA-600/2-80-169 (NTIS PB80-225717), July 1980. SO_2 emission factors were calculated using information on flow rates, concentrations, feed capacities, and zinc content. p. 33-38. VOC emissions are considered to be zero based on qualitative descriptions of atmospheric emissions from these sources: "Waste streams contain SO_2, oxygen, nitrogen, carbon dioxide, and water vapor only."

220. SO_x, NO_x, and VOC emission factors for ore dryers in the metallic minerals industry were calculated using information from "Calciners and Dryers in Mineral Industries - Background Information for Proposed Standards." EPA-450/3-85-025a (NTIS PB86-196904/XAB), October 1985. The majority of dryers used in this industry are direct rotary dryers fired with natural gas (Chapter 3). A 98 percent efficiency of combustion was assumed.

221. VOC emission factor based on emissions data from State files (State G). Production rates and heating load of the equipment were provided by company.

222. NO_x and VOC emissions are expected to be zero based on information from "Industrial Process Profiles for Environmental Use, Chapter 28: Primary Zinc Industry." EPA-600/2-80-169 (NTIS PB80-225717), July 1980. p. 70-72.

223. VOC emission factor calculated from information in "Calciners and Dryers in Mineral Industries - Background Information for Proposed Standards." EPA-450/3-85-025a (NTIS PB86-196904/XAB), October 1985. The majority of calciners in these industries are fired with natural gas (Chapter 3). Typical capacities of these calciners were listed and a 98 percent combustion efficiency was assumed.

224. VOC emission factor based on 11 values from State files (State D). Emissions are reported as total hydrocarbons and may overestimate VOC's.

225. VOC emission factors for coal cleaning thermal dryers were transferred from the AP-42 derived emission factor for fluidized bed thermal dryers. All dryers listed are direct-fired and operate at similar temperatures. Seventy-five percent of the dryers used in coal cleaning are fluidized-bed dryers. Descriptions of dryers used in this industry are found in "Assessment of Coal Cleaning Technology: First Annual Report." EPA-600/2-78-150 (NTIS PB 287091/3), July 1978, p. 127-132, and in "A Review of Standards of Performance for New Stationary Sources - Coal Preparation Plants." EPA-450/3-80-022 (NTIS PB82-193053), December 1980.

226. VOC emission factors were calculated from information in "Standards Support and Environmental Impact Statement, Volume 1: Proposed Standards of Performance for Lime Manufacturing Plants." EPA-450/2-77-007a (NTIS PB 226942/2), April 1977. Calciners and kilns are fired with natural gas and a 98 percent combustion efficiency was assumed. VOC emission factors were calculated using heats of reactions given for calcination reactions.

227. VOC emission factors for storage of petroleum distillate were transferred from those listed for naphtha due to similar volatilities. Petroleum distillates differ from source to source and this factor should be used only in the absence of specific information on the components of the distillate.

228. NO_x and VOC emission factors were calculated based on information from "Industrial Process Profiles for Environmental Use, Chapter 29: Primary Copper Industry." EPA-600/2-80-170 (NTIS PB81-164915), July 1980. p. 30-45. A 98 percent combustion efficiency was assumed.

229. VOC emission factors were calculated based on information from "Industrial Process Profiles for Environmental Use, Chapter 27: Primary Lead Industry." EPA-600/2-80-168 (NTIS PB81-110926), July 1980. p. 49. Natural gas is the fuel used and a 98 percent combustion efficiency was assumed. SO_x and NO_x emissions calculated from "Compilation of Air Pollutant Emission Factors" (Section 1.4) and were assumed to result only from fuel combustion.

230. VOC and NO_x emission factors based on emissions from State files (State G) and emissions provided by companies. An average of four emission tests was taken to generate an emission factor estimate for this general category. The number listed for VOC represents total hydrocarbons and may be an overestimate of VOC.

231. Personal communication with Mr. Steve Jenness, Army Environmental Hygiene Agency, Maryland. February 1987. Mr. Jenness only had the AP-42 data (Table 5.6-2) and said that VOC's (toluene and trinitromethane) were found to be negligible. Personal communication with Mr. James Morris at Radford Army Ammunition Manufacturing Plant. February 1987. He thought that the batch process was no longer being used, but emissions would be similar. Emissions from the incinerator were assumed to be similar to those from open burning of waste.

232. These chemicals are solids at ambient temperatures and are stored in containers or tanks which could, theoretically, be classified as fixed roof tanks. VOC emissions would be negligible (if any) when storing these solids.

233. VOC emission factors for withdrawal losses from these general categories were transferred from emission factors calculated for withdrawal losses from specific chemicals listed in each category. Withdrawal losses are very small for all chemicals and variations are minimal between different chemicals.

234. VOC emission factor was calculated using heat load information from "Industrial Process Profiles for Environmental Use, Chapter 24: Iron and Steel Industry." EPA-600/2-77-023x (NTIS PB 266226/0), February 1977. p. 30-35.

235. VOC emissions for casting operations are considered negligible based on information from "Industrial Process Profiles for Environmental Use, Chapter 24: Iron and Steel Industry." EPA-600/2-77-023x (NTIS PB 266226/0), February 1977. p. 111.

236. VOC emission factors for solid waste and liquid waste-fired boilers were transferred from those listed for industrial solid waste and liquid waste-fired boilers. These emission factors are estimates at best, and emissions will vary greatly depending on the type of waste being burned. NO_x and SO_x emission factor estimates for waste oil were transferred from those listed for residual oil.

237. NO_x and VOC emission factors were calculated using information on process descriptions from "Industrial Process Profiles for Environmental Use, Chapter 24: Iron and Steel Industry." EPA-600/2-77-023x (NTIS PB 266226/0), February 1977. Heating values for the fuels and emission factors for the fuel combustion are from AP-42 Third Edition, "Compilation of Air Pollutant Emission Factors" (Sections 1.1, 1.3, 1.4, and Appendix A-10). VOC emissions are assumed to result only from the fuel combustion.

238. VOC emission factor was calculated from data in Table 7-7 in "Assessment of Atmospheric Emissions from Petroleum Refining: Volume 1." EPA-600/2-80-075a (NTIS PB80-225253), July 1980. The numbers and types of sources are highly variable, and emissions are dependent on process conditions. This factor is best used only when individual refinery data are not available.

239. VOC emission factor was transferred from 3-04-002-23 (electric induction furnace). Since both furnace types operate on electricity, emissions are assumed to be similar.

240. VOC and SO_x emission factors were transferred from other heaters listed in the food and agriculture industry. SO_x emissions come only from the combustion source. AP-42 lists emission factors for aldehydes and organic acids from roasting of coffee beans. VOC also are generated from the combustion materials. The emission factors presented are estimates at best and should only be used in the absence of specific emissions data.

241. VOC emissions are expected to be zero based on qualitative information provided in AP-42 Third Edition, "Compilation of Air Pollutant Emission Factors" (Section 7.5).

242. VOC, NO_x, and SO_x emission factors were transferred from annealing furnaces in other industries based on process descriptions provided in AP-42 Third Edition, "Compilation of Air Pollutant Emission Factors" (Section 7.5).

243. VOC emission factor was estimated based on process descriptions given in "Electric Arc Furnaces in Ferrous Foundries - Background Information for Proposed Standards." EPA-450/3-80-020a (NTIS PB80-202997), May 1980. When working with alloys, tapping emissions are somewhat greater than charging emissions due to the higher temperatures required. Using engineering judgement, the emission factors for charging were doubled to give a best estimate of VOC emissions from tapping operations.

244. VOC emission factor was transferred from the listing for commercial/institutional pathological waste incinerator as the best estimate of VOC emissions from government pathological waste incinerators. Emissions will vary depending on the type of waste burned and this emission factor should only be used in the absence of source specific test data.

245. VOC emission factor was transferred from the listing for aluminum sweating furnace (3-04-001-01) based on the similarity of process descriptions for foil converting.

246. SO_x, NO_x, and VOC emission factors estimated to be zero based on process descriptions given in "Industrial Process Profiles for Environmental Use, Chapter 24: Iron and Steel Industry." EPA-600/2-77-023x (NTIS PB 266226/0), February 1977, and AP-42 Third Edition, "Compilation of Air Pollutant Emission Factors" (Section 7.10).

247. VOC emission factor was transferred from a similar process description in the primary and secondary zinc industry.

248. VOC emission factor was transferred from emission factors calculated for similar furnaces in the secondary aluminum industry.

249. VOC emission factor was transferred from an emission factor calculated for a similar furnace used in gray iron melting.

250. VOC emission factor was transferred from emission factor calculated for similar processes in the lime manufacturing industry assuming that emissions are from the fuel combustion only.

251. SO_x emission factor was transferred from a similar furnace in the secondary aluminum industry (3-04-001-12).

252. VOC emission factors were transferred from emission factors calculated for similar furnaces used in the primary steel industry.

253. NO_x and SO_x emission factors were transferred from listings for an electric arc furnace heating alloy steel.

254. No VOC emissions are expected from these sintering processes because all vents are tied into the sintering wind box.

255. VOC emissions for teeming were transferred from listings for tapping. Teeming is the process of pouring hot iron or steel into molds. Temperatures of the molten iron or steel would be similar to temperatures during tapping, therefore, similar emissions are expected.

256. The characteristics for formalin were calculated assuming the solution contained 40 percent formaldehyde and 60 percent water.

257. Personal communication with Mr. Jay Willenberg, Washington Department of Ecology. March 1987. No test data are available on NO_x or VOC's. NO_x emissions are expected to be zero due to low temperatures of operation.

258. VOC emission factor estimates were assigned based on information provided from two studies on wastewater treatment plants conducted by U. S. EPA Region I. The factor for the entire plant was generated from data provided. This factor was then divided among the primary and secondary settling tanks by engineering judgement. VOC emissions are dependent on the treatment method and the content of the VOC's in the wastewater influent; therefore, these estimates should be used only in the absence of site specific data.

259. Personal communication with Mr. Jay Willenberg, Washington Department of Ecology. March 1987. No NO_x and negligible VOC's are expected; the first due to low operating temperatures, the second because there is no apparent source.

260. NO_x and SO_x emissions are expected to be zero due to the lack of a potential source. Organic emissions result mainly from the wood itself and these naturally occurring organic species (i.e., terpenes) are not considered volatile using EPA's definitions. Therefore, VOC emissions are estimated to be negligible.

261. Personal communication with Mr. Mike Styk, New York Regional Office. February 1987. Mr. Styk thought that SO_x and NO_x would be zero because the operation takes place in an inert atmosphere. Personal communication with one company representative from the State files provided the production information. February 1987. The emission factor for VOC is based on one facility.

262. SO_x, NO_x, and VOC emissions are considered negligible for these physical processes based on engineering judgement.

263. SO_x and NO_x emissions are considered to be zero due to the type of chemical being stored.

264. Personal communication with industry personnel. March 1987. Industry provided data on four facilities, from which an SO_x emission factor was calculated.

265. "Negligible VOC emissions" was taken from the Food and Wood Products Branch Program on Wood Preserving Industry Summary Status (Handout), Draft. February 18, 1982.

266. Personal communication with Mr. Victor Dallons, NCASI (January 26, 1987) and Mr. Jay Willenberg, Washington Department of Ecology (March 2, 1987), indicated that emissions from the fluid bed calciner would probably be similar to those from the lime kiln.

267. NO_x emission factor was transferred from other calciners in the mineral products industry using engineering judgement.

268. VOC emissions were derived from "Organic Chemical Manufacturing, Volume 8: Selected Processes." EPA-450/3-80-028c (NTIS PB81-220576), December 1980. The general SCC is an underestimate of VOC's. No NO_x or SO_x emissions are expected from review of the process.

269. VOC emissions (except for fugitive emissions) are based on a model plant and data from industry presented in "Organic Chemical Manufacturing, Volume 8: Selected Processes." EPA-450/3-80-028c (NTIS PB81-220576), December 1980. From the process description (assuming methane chlorination process), no NO_x emissions are expected. SO_x emissions from the H_2SO_4 dryers are expected to be negligible.

270. SO_x and NO_x emission factors were transferred from factors listed for other calciners in the mineral products industry.

271. SO_x emission factor based on personal communication with Mr. Lloyd Kostaw, Oregon Department of Environmental Quality. March 12, 1987. There is no potential source for SO_x emissions.

272. VOC emission factor is based on personal communication with one plant from State I data. Cold mix asphalt cement was assumed.

273. No VOC emissions are expected from these processes. Process descriptions supplied by "Kirk Othmer Concise Encyclopedia of Chemical Technology, Metal Surface Treatment." John Wiley and Sons, Inc. 1985.

274. NO_x emission factor was calculated using an estimated average emission rate provided in "Background Information for Proposed Standards: Primary Aluminum Industry, Volume 1." EPA-450/2-74-020a (NTIS PB 237612/7B,E), October 1974, and average capacities provided in "Industrial Process Profiles for Environmental Use, Chapter 25: Primary Aluminum Industry." EPA-600/2-77-023Y (NTIS PB 281491/1), February 1977.

275. NO_x emission factor is estimated to be negligible based on process description provided in "Industrial Process Profiles for Environmental Use, Chapter 29: Primary Copper Industry." EPA-600/2-80-170 (NTIS PB81-164915), July 1980. No mention of NO_x emissions was provided; therefore, it was inferred that they are negligible.

276. NO_x and SO_x emissions are considered negligible based on information on process descriptions from "Industrial Process Profiles for Environmental Use, Chapter 24: Iron and Steel Industry." EPA-600/2-77-023x (NTIS PB 266226/0), February 1977.

277. SO_x, NO_x, VOC, and CO emission factors were calculated using stack gas concentrations, flowrates, and charge rates given in "Draft Final Test Report - Site 10: Secondary Copper Recovery Cupola Furnace, National Dioxin Study, Tier 4: Combustion Sources." Prepared for U. S. Environmental Protection Agency. Research Triangle Park, North Carolina. January 1986.

278. VOC, NO_x, and SO_x emission factors are estimated to be zero based on engineering judgement and a review of the process provided in AP-42 Fourth Edition.

279. NO_x, SO_x, and VOC emission factors are estimates using technology transfer from atmospheric fluidized beds used for commercial/institutional external combustion boilers (1-03-002-17).

280. NO_x and SO_x emissions are expected to be zero based on personal communication with industry representatives. These are physical processes in which particulates are the main pollutant of concern.

281. VOC, NO_x, and SO_x emission factors were transferred from those listed for core ovens (3-04-003-51) based on process descriptions provided by industry personnel.

282. No NO_x, SO_x, or VOC emissions are evolved during this process. "Kirk Othmer Concise Encyclopedia of Chemical Technology, Powder Coatings." John Wiley and Sons, Inc. 1979.

283. No SO_x emissions are expected for this process from review of the process description. Negligible NO_x emissions are expected due to the temperature of the process. "Kirk Othmer Concise Encyclopedia of Chemical Technology, Metallic Coatings." John Wiley and Sons, Inc. 1979.

284. VOC emission factors were transferred from similar processes listed in vinyl chloride manufacturing.

285. VOC emissions are expected to be negligible from these processes based on engineering judgement.

286. VOC emission factor based on process description from "Control of Volatile Organic Emissions from Manufacture of Synthesized Pharmaceutical Products." EPA-450/2-78-029 (NTIS PB 290580/0), December 1978. Chapter 3. Four companies submitted emission estimates indicating that VOC from reactors is well under 100 tons/year. Assumes that centrifuges and crystallizers are completely enclosed and the only source of VOC emissions is while product is being loaded and unloaded to the process unit. Using this information, the emission factor for 3-01-060-05 was applied. Emission factors for solvent usage for coating and granulation processes were estimated to be 10 percent of total solvent used, by engineering judgement and typical emissions from other coating processes.

287. VOC emission factors estimated from process emission ranges in "Control of Volatile Organic Emissions from Existing Stationary Sources - Volume II: Surface Coating of Cans, Coils, Papers, Fabrics, Automobiles, and Light-Duty Trucks." EPA-450/2-77-008 (NTIS PB 272445/8), May 1977. Engineering judgement was used to assign an approximate percent to each part of the coating process where a percent was not otherwise given:

Cleaning/pretreatment = NEG
Coating storage = NEG (compared to other operations)
Coating mixing = 10 percent
Equipment cleanup = 10 percent
Coating operation(s) = 80 percent

These are to be used only in the absence of better information.

288. VOC emission factors were estimated from information in Table 5.4-1 in "Control Techniques for Organic Gas Emissions from Fiberglass Impregnation and Fabrication Processes." SAI-068-83-001 (NTIS PB82-251103), June 1982. These factors represent total organic emissions from non-vapor suppressed process operations.

289. VOC emission factor for solvent consumption based on three values from State files (States A and D). This emission factor was transferred to adhesive consumption to provide an estimate of emissions in the absence of better data. Values from State D represent total hydrocarbon and may overestimate VOC's.

290. VOC emission factors based on percentages of solvent loss for each operation in the fabric surface coating industry and estimated from process descriptions in "Industrial Surface Coating: Appliances - Background Information for Proposed Standard," Draft EIS. EPA-450/3-80-037a (NTIS PB82-152174), November 1980. Approximate ratios of emissions from primer coating and top coat application derived from AP-42 data. These are to be used only in the absence of better information.

291. NO_x emission factors based on 30 to 40 values from State files (State D).

292. VOC emission factors for chemicals stored in pressure tanks were estimated based on information in Section 4.3 of AP-42 (September 1985) and physical properties of the chemicals obtained from chemistry handbooks. For chemicals stored at pressures higher than 30 psia, no emissions are expected. For chemicals stored at lower pressure (less than 30 psia), emissions were estimated assuming 1000 gallon removal.

293. VOC emission factors based on estimated percentages of solvent loss for each operation in the fabric surface coating industry (see footnote 287). These are to be used only in the absence of better information.

294. VOC emission factors based on percentages of solvent loss for an operation in the fabric surface coating industry and estimated from process descriptions in "Surface Coating of Metal Furniture - Background Information for Proposed Standards," Draft EIS. EPA-450/3-80-007a (NTIS PB81-113938), September 1980. These are to be used only in the absence of better information.

295. No NO_x emissions are expected based on the process description presented in "Organic Chemical Manufacturing, Volume 7: Selected Processes." EPA-450/3-80-0286 (NTIS PB81-220568), December 1980.

296. VOC emission factor based on 11 values from State files (States A and D). Values from State D are for total hydrocarbon and may overestimate VOC's. SO_x emission factor is an estimate derived from the factor listed for coating oven, general (4-02-008-01), using the same ratio of emissions as those listed for NO_x.

297. SO_x emission factor calculated from AP-42 Supplement A value for screening and grinding less the value for grinding, also given.

298. Particulate matter emission factor is updated from values given in AP-42 Supplement A (December 1986).

299. SO_x emission factor is updated from values given in AP-42 Supplement A (December 1986).

300. NO_x emission factor is updated from values given in AP-42 Supplement A (December 1986).

301. VOC emission factor is updated from values given in AP-42 Supplement A (December 1986).

302. CO emission factor is updated from values given in AP-42 Supplement A (December 1986).

303. NO_x emission factor was estimated based on personal communication with Mr. Willard Hanes, Florida Bureau of Air Quality Management. March 20, 1987. No NO_x emissions are expected from the ammoniator because there is no source.

304. Emission factors for NO_x, SO_x, and VOC were transferred from 3-05-016-11. Emissions are expected to be zero.

305. SO_x emission factor from "Air Pollution Control Technology for Electric Arc Furnaces in the Iron and Steel Foundry Industry." EPA-450/2-78-024 (NTIS PB 283650/0), June 1978.

306. VOC emission factor was transferred from that listed for hexamethylenediamine which was based on a stack test. Process descriptions were reviewed in "Organic Chemical Manufacturing, Volume 9: Selected Processes." EPA-450/3-80-028d (NTIS PB81-220584), December 1980. Report 7. VOC process emissions for three different ethanolamines are listed as "trace."

307. NO_x and SO_x emissions are estimated to be negligible based on personal communication with industry representatives. Emissions are less than 100 tons per year for NO_x and SO_x.

308. VOC, NO_x, and SO_x emissions are estimated to be negligible based on personal communication with industry representatives. Emissions are less than 100 tons per year for these pollutants.

309. VOC and NO_x emissions are estimated to be negligible based on personal communication with industry representatives. Emissions are less than 100 tons per year for VOC and NO_x.

310. VOC emissions are expected to be zero for these processes based on technology transfer from plastics production, general (3-01-018-16).

311. NO_x, SO_x, and VOC emissions are estimated to be negligible based on personal communication with Mr. Robert Kulp, Department of Emissions Inventory, Harrisburg, Pennsylvania Regional Air Office. March 1987.

312. VOC emission factor for wood pallets was transferred from open burning of vegetation. The VOC factors for fuel burning was transferred from those listed for similar fuels burned in incinerators assuming that combustion efficiencies are similar.

313. VOC emission factor was calculated using an average density of paint of 9 pounds/gallon and an average solvent percentage of 60 percent (these estimates were provided by the industry). Based on technology transfer from other surface coating operations, it was assumed that all solvent is emitted during the process. The solvent loss was then divided out among the different coating processes using ratios from other surface coating operations.

314. VOC emission factor was transferred from the factors estimated for natural gas and process gas-fired flares.

315. VOC emission factors were calculated using equations in Section 4-3 of AP-42 Third Edition (September 1981) which separated emissions from primary and secondary seals. The Fourth Edition of AP-42 contains a revised Section 4-3 which does not include separate equations for emissions from primary and secondary seals.

316. SO_x and NO_x emission factors estimated to be zero or negligible based on engineering judgement.

317. SO_x emission factor estimated to be zero or negligible based on engineering judgement.

318. NO_x and SO_x emission factors are estimated to be zero based on information in "Organic Chemical Manufacturing, Volume 8: Selected Processes." EPA-450/3-80-028c (NTIS PB81-220576), December 1980. Report 4.

319. SO_x and VOC emission factors are based on personal communication with Coffee Information Institute. March 26, 1987. Negligible emissions are expected from this physical process.

320. VOC emission factor is based on data from State files as a result of engineering estimates (State M). Data were provided specifically for the NH_3 Digester/Blow Pit/Dump Tank but should be similar for the other digester/blow pit/dump tanks.

321. VOC emission factors were calculated using organic particulate information and the assumption that all total organic particulate matter will volatilize. "Secondary Zinc Industry Emission Control Problem Definition Study." EPA-APTD-0706. Table VII-1.

322. VOC emission factor considered negligible for pouring and casting of zinc; transferred from lead pouring and casting (3-03-010-20 and 3-04-004-09), based on similar melting points of zinc and lead.

323. VOC emission factors were estimated from information in "Secondary Zinc Industry Emission Control Problem Definition Study." EPA-APTD-0706, May 1971. Tables IV-1 and IV-2. No mention of VOC in retort operations. Zinc oxides, metal oxides, chlorides, air, and nitrogen are listed. No VOC emissions are expected from clean metallic scrap.

324. NO_x, SO_x, and VOC emission factors considered negligible by engineering judgement. Sodium carbonate leaching is an inorganic aqueous process with negligible sulfur or NO_x present.

325. VOC emissions transferred from 3-04-008-71, alloying retort distillation. No organic material present in the alloying process. Alloying and galvanizing are similar processes.

326. VOC emission factor transferred from 3-04-008-51, retort and muffle distillation: pouring. The distillation process produces predominantly zinc oxide vapor. The main difference between distillation processes is the zinc vapor cooling rate to produce zinc slabs or zinc dust.

327. VOC emission factor transferred from similar sweating furnaces based on engineering judgement. The emissions will be similar from all the sweat processes for the same type of charge.

328. SO_x emission factor calculated from technology transfer of 3-04-002-07, secondary copper scrap dryer, and using a 50 percent recoverable aluminum scrap charge.

329. VOC and NO_x emission factor estimates are based on technology transfer from hand-fired bituminous-coal boilers in commercial/institutional facilities (1-03-002-14). Coal usage provided by one company operating four plants.

330. Personal communication with the Michigan Air Quality Division. April 2, 1987. NO_x and SO_x emission factors for the dryers are based on calculations for the use of natural gas at one plant. NO_x from the presses are considered negligible due to the lack of an obvious source. Predryers reduce moisture before pressing; therefore, VOC's are expected to be similar to those of the dryer. VOC and NO_x emissions on the bake oven are also based on natural gas use of one oven.

331. VOC emission factor was estimated using the same ratio of emissions listed for gasoline RVP13, gasoline RVP10, and gasoline RVP7 for other storage tanks. The emission factor for gasoline RVP7 was estimated to be approximately half the value of the emission factor listed for gasoline RVP13 using engineering judgement.

332. Emission factors for all five criteria pollutants were estimated using technology transfer from other open-top vapor degreasing SCC's and other thinning solvent SCC's.

333. SO_x, NO_x, VOC, and CO emissions are expected to be zero based on emission factors presented for the same processes with different units (3-04-005-05 to 3-04-005-12).

334. VOC emission factors were transferred from similar storage tanks storing crude oil on-site at refineries (4-03-011).

335. VOC emission factor was calculated using information supplied by Mr. C. R. DeRose, Celanese Chemical Company, Inc. Letter dated April 21, 1978, to Mr. L. Evans, U. S. Environmental Protection Agency.

336. VOC emission factor was calculated using information provided in Mr. J. W. Blackburn, Hydroscience, Inc. Trip Report. "Emission Control Options for SOCMI." June 1, 1978. Prepared for U. S. Environmental Protection Agency.

337. VOC, NO_x, and SO_x emission factors were calculated based on two tests reported by Mr. R. DeRosier and Mr. L. R. Waterland, Acurex Corporation. "Environmental Assessment of a Watertube Boiler Firing a Coal-Water Slurry, Volume I." Technical Results. Prepared for U. S. Environmental Protection Agency. EPA-600/7-86-004a (NTIS PB86-159845/REB), February 1986.

338. NO_x and SO_x emission factors were estimated using technology transfer from curing ovens in the mineral wool industry (3-05-017-04).

339. VOC emissions are estimated to be negligible because the blowing agent is not considered a volatile organic compound using EPA's definition.

340. VOC emission factors were estimated using information provided in AP-42 Fourth Edition (Section 4.2.2.7). September 1986. Based on average percentages of emissions lost during the coating operations. The coating contains approximately 60 percent solvent and all solvent is evaporated during the coating process. Using engineering judgement, it was assumed that 10 percent of the solvent evaporates during impregnation and hot melt coating.

341. VOC, NO_x, and SO_x emission factors are estimates which were transferred from those listed for pressed and blown glass melting furnace (3-05-014-04). Information could not be located on ground cullet beading furnaces in the literature, through State contacts, or through industry contacts. This description may need updating to better reflect the furnace type used in the industry.

342. SO_x, NO_x, and VOC emission factors based on two values from State files (State D). VOC emissions are reported as total hydrocarbon and may overestimate VOC's.

343. SO_x, NO_x, and VOC emission factors based on one value from State files (State D). VOC emissions are reported as total hydrocarbons and may overestimate VOC's.

344. SO_x emission factor based on one value, NO_x emission factor on four values, and VOC emission factor on two values from State files (State D). VOC emissions are reported as total hydrocarbon and may overestimate VOC's.

345. SO_x emission factor based on two values, NO_x emission factor on six values, and VOC emission factor on five values from State files (State D). VOC's are reported as total hydrocarbon and may overestimate VOC's.

346. VOC emission factor is calculated from data given in "Locating and Estimating Air Emission from Sources of Vinylidene Chloride." EPA-450/4-84-007k, (NTIS PB86-117611/REB), September 1985. The numbers are for a hypothetical plant and a continuous operation is assumed.

347. SO_x emission factor based on two values from State files (States C and D).

348. VOC emission factors for SCC's 4-02-010-02 through 4-02-010-05 are based on percentages of solvent loss for each operation in the fabric surface coating industry and from process descriptions in "Automobile and Light-Duty Truck Surface Coating Operations - Background Information for Proposed Standards." EPA-450/3-79-030, (NTIS PB80-123540), September 1979. The coating application estimates are derived from AP-42 data, assuming a ratio of four automobiles to every truck produced. Repair topcoat application is expected to produce fewer VOC's; an estimate of 10 percent is assigned. These are to be used only in the absence of better information.

349. VOC emission factors calculated from ratios given in AP-42 data. Two- and three-piece can manufacturing are considered separately. Process description taken from "Control of Volatile Organic Emissions from Existing Stationary Sources, Volume II: Surface Coating of Cans, Coils, Papers, Fabrics, Automobiles, and Light-Duty Trucks," Guidance Series. EPA-450/2-77-008 (NTIS PB 272445/8), May 1977. Overvarnish (4-02-017-28) emissions are expected to be lower than metal coating and are estimated at 10 percent of total solvent loss. These are to be used only in the absence of better information.

350. VOC emission factor transferred from sulfuric acid production based on engineering judgement.

351. VOC and NO_x emissions are expected to be negligible based on the process description provided by the Michigan Department of Natural Resources. April 8, 1987. The heat source is assumed to be steam.

352. SO_x emission factor transferred from siliconmanganese electric smelting furnace due to process similarities.

353. SO_x, NO_x, and VOC emission factors transferred from a similar process in the gray iron foundry industry.

354. VOC emission factor transferred from 50 percent ferrosilicon electric smelting furnace due to similarities in the furnace and charge composition.

355. VOC emission factor transferred from ferromanganese blast furnace due to similarities in charge composition.

356. VOC emission factor transferred from a similar process in the sintering industry.

357. SO_x, NO_x, and VOC emission factors transferred from by-product coke manufacturing oven/door leaks by engineering judgement.

358. VOC, SO_x, and NO_x emission factors transferred from a similar process in the mineral products industry.

359. NO_x emission factor transferred from secondary aluminum rolling/drawing/extruding due to similarities in metal treatment.

360. NO_x emission factor transferred from electric arc furnace in the steel industry due to process similarities.

361. VOC emission factor transferred from a similar process in the primary copper industry.

362. SO_x, NO_x, and VOC emission factors transferred from a similar process in the primary copper industry.

363. SO_x, NO_x, and VOC emission factors transferred from a similar process in the secondary aluminum industry.

364. SO_x and VOC emission factor transferred from a similar process in the gray iron foundry industry.

365. SO_x, NO_x, and VOC emission factor transferred from similar process in other metals industries. Pickling/neutralizing emission factors were transferred from the primary steel industry and EAF with carbon electrode emission factors were transferred from the primary aluminum prebaked reduction cell due to process and metal similarities.

366. VOC emission factor transferred from pulverized bituminous coal due to similarities in flue gas.

367. VOC emission factor transferred from anode baking furnace by engineering judgement. It is assumed that the VOC's driven off in the anode baking furnace are primarily those evolved during the use of a Soderberg cell. It was also assumed that all the cell binder volatilized. VOC emission factor for the prebaked reduction cell was estimated assuming that 10 percent of the emissions from a Soderberg cell would be emitted in the prebaked cell during normal operating conditions (engineering judgement).

368. VOC emission factors were transferred from similar operations in other chemical manufacturing industries.

369. VOC emission factor for gas stripping is calculated from data on a typical gas plant presented in "Equipment Leaks of VOC in Natural Gas Production Industry - Background Information for Proposed Standards." Draft EIS. EPA-450/3-02-024a (NTIS PB84-155126/REB), December 1983. In the absence of an SCC for gas plants and an identification for gas stripping, gas plant operations as a whole are assumed. The VOC emission factor for gas lifts was transferred from that listed for compressors due to process similarities.

370. VOC emissions for asphalt melting kettle are assumed negligible because the process requires melting at low temperatures (less than $450^{o}F$) and decomposition or volatilization is not expected. If solvents are used, then VOC's will result from solvent evaporation. VOC emission factors for dipping, spinning, and wrapping are based on coal tar epoxy use and associated solvent loss. Coal tar epoxies may be sprayed and require no heat use. The units of $lbs/10^3$ square feet are for a 7 mm thick coating.

371. NO_x and SO_x emission factors transferred from factors listed for hot burning furnaces in the metals industry.

372. VOC emission factors are estimates based on a review of the process descriptions provided in "SOCMI Reactor Processes - Background Information for Proposed Standards." Draft EIS. October 1984. These factors were transferred from similar processes in the organic chemical manufacturing industry as best estimates.

373. VOC emission factor for process gas-cogeneration was transferred from petroleum refining gas as a best estimate. VOC emission factor for process gas-reciprocating was transferred from natural gas-reciprocating due to similarities in the gas composition.

374. Emission factors for all five pollutants were provided by the State of Minnesota, when they requested that this SCC be added to NEDS.

APPENDIX B

FOOTNOTES FROM ORIGINAL NEDS DOCUMENTS

[a] Both boiler capacities and throughputs must be reported to NEDS for all boilers.

[b] This emission factor is an approximation. Particulate emissions from residual oil combustion can be more accurately estimated from the equation lb/1000 gallon = 10S + 3. See AP-42, page 1.3-2.

[c] The emission factor(s) are non-standard. The factor(s) are derived from AP-42 data for another similar source category.

[d] The emission factor(s) are not from AP-42. The factor(s) are from other EPA documents, State data, or other miscellaneous sources.

[e] This emission factor is an approximation. Particulate emissions from waste oil combustion can be more accurately estimated by the factor 75A, where A = weight (%) percent of ash in the waste oil. See AP-42, page 1.11-1.

[f] Fugitive emissions occur from numerous locations within industrial facilities, as of 1978, most of these sources have not been fully characterized. To allow these fugitive sources to be represented in NEDS, common SCC codes have been developed. These codes should be used in addition to the main process SCC codes associated with the facility. Specific fugitive emissions that have been characterized are also contained in this table.

[g] These emission factors are from an earlier edition of AP-42. This is an obsolete process. The last channel black plant in the U.S. closed in 1976.

[h] These emission factors are from an earlier edition of AP-42. This is an obsolete process. The gas furnace process is being phased out in the U.S.

[i] Manufacture of inorganic pigments is classified under SCC 3-01-035-**.

[j] For molded and fabricated rubber and plastics products, see SCC 3-08-***-***, 3-30-002-**, and 4-02-002-**.

[k] This emission factor is an assumed average value from a range of values given in AP-42, Table 5.17-2.

[l] Also applies to the sulfur recovery plant at petroleum refineries and natural gas production fields.

[m] See 3-01-301-** for other chlorobenzene process codes.

[n] Grain processing and milling are included in SCC's 3-02-007-** thru 3-02-008-**. For grain elevators, see SCC 3-02-005-**, 3-02-006-**, and 3-02-031-**.

[o] Units refer to amount of grain processed through each operation. If only the total amount of grain received or shipped is known, see AP-42, Table 6.4-2 for typical ratios of tons processed to tons shipped or received.

[p] The particulate emission factor is on emissions at the inlet to the baghouse or other control device. Indicate the control device and efficiency to properly estimate the actual emissions.

[q] Codes 3-03-003-09, -10, and -11 represent individual operations within this SCC (3-03-003-07).

[r] These emission factors are from an earlier edition of AP-42. The current version of AP-42, Fourth Edition, no longer reports emission factor(s) for this process.

[s] This emission factor is a weighted average of values given in AP-42, Table 7.3-2.

[t] Represents total CO generated, report control equipment as 022 for CO boiler or 060 for process gas recovery to properly account for actual emissions.

[u] Represents total CO generated, report control equipment as 022 for CO boiler or 023 for flaring to properly account for actual emissions.

[v] These emission factors are derived from AP-42 data. A units adjustment has been made to the AP-42 data. See AP-42, Table 7.6-1.

[w] Apply for all metallic minerals except as noted. Low moisture ore is defined as having less than 4 percent moisture content by weight for ore entering the primary crusher. High moisture ore has over 4 percent by weight.

[x] Emission factor does not apply to bauxite ore.

[y] Emission factor does not apply to drying of titanium/zirconium sands. See SCC 3-03-012-** for titanium processing.

[z] Calculated from emission factors given in Table 7.9-2, Footnotes b-e.

[aa] This emission factor is an approximation. To more accurately estimate SO_2 emissions, use the factor 1.25S, where S = weight (%) percent of sulfur in the coke. See AP-42, Table 7.10-1.

[bb] This emission factor is an approximation. To more accurately estimate SO_2 emissions, use the factor .292 S, where S = weight (%) percent of sulfur in the fuel. See AP-42, Table 8.1-1.

[cc] This emission factor is from an earlier edition of AP-42. Currently, AP-42, Fourth Edition calculates an emission factor in a different manner. See AP-42, Section 11.2.3.

[dd] Use kiln code and appropriate 3-90 code for fuel used in kilns to properly account for all SO_x emissions.

[ee] These SCC codes are also applicable to Coal Cleaning Operations at power plants.

[ff] This emission factor is from an earlier version of AP-42. See AP-42, Table 8.14-1.

[gg] Expressed as emission rate at point of release. For uncontrolled sources, to account for emissions that settle out within the plant, code a fictitious control device code for particulate of 006 (low efficiency gravitational collector) with appropriate control efficiency. See AP-42, Section 8.2.0 for table of typical control efficiencies for gravitational settling.

[hh] Several processes that routinely occur in Major Group 29 can be found under other major groups. Specifically, note the following:

- waste of process gas and/or liquid fired boilers - SCC 1-02-***-**.
- internal combustion compressor engines - SCC 2-02-***-**.
- amine sweeting process - SCC 3-10-002-**.
- sulfur recovery process - SCC 3-01-032-**.
- sulfuric acid plant - SCC 3-01-022-** or 3-01-023-**.

[ii] Represents total CO and VOC generated. Report control device as 022 if CO boiler is present to properly account for actual emissions.

[jj] Units expressed as the equivalent number of valves, seals, flanges, or drains in the refinery on an annual operating basis (8,760 hours/year). For example, if there are 1,000 seals, all operating 8,760 hours/year, then operating rate = 1,000. However, if the average operating time is 6,570 hours/year (3/4 of the total hours in a year), then operating rate = 1,000 x (6,570, 8,760) = 750 seals. All counts of valves, seals, flanges, and drains should be similarly adjusted to account for the average annual hours of operation in the refinery.

[kk] Process changes may include such measures as raising the pH of the cooking liquor, thereby lowering the free SO_2, relieving the pressure in the digester before the contents are discharged, and pumping out the digester contents instead of blowing them out.

[ll] The emission factor is non-standard. The factor is derived from AP-42 by a units conversion. See AP-42, Section 10.4.

[mm] For Surface Coating Operations, see SCC 4-02-019-** and 4-02-021-**.

[nn] For tire retreading operations, see SCC 3-08-005-**.

[oo] The sulfur content of the fuel as H_2S on a mole percent basis.

[pp] For specific printing SCCs, see SCC 4-05-***-**.

[qq] In-process fuel codes must always be used in conjunction with the appropriate process code.

[rr] This emission factor is non-standard. The factor is derived from AP-42 and Bureau of Mines data. See AP-42, Section 8.6.

[ss] A table of typical solvent densities can be found in Section 3, Chapter 16 of AEROS Volume V.

[tt] These solvents are estimated to be of negligible photochemical reactivity.

[uu] Use these SCCs to provide a rough estimate of emissions only when information on the identity and/or quantity of make-up solvent used is not available.

[vv] These are general SCCs applicable to all industrial categories.

[ww] This emission factor is non-standard. The factor is derived from average coating density data in AP-42, Section 4.2.2.

[xx] These solvents are used to thin coatings and thus should be used with one of the coating codes.

[yy] This SCC should only be used to provide rough estimates of emissions for cases when information on amount of fabric processed is not available.

[zz] For surface coating of small appliances, see SCC 4-02-025-**, surface coating of miscellaneous metal parts.

[aaa] Includes Major Group 34 fabricated metal products, Major Group 35 small appliances, and other coating operations Major Group 33-39 not specified elsewhere.

[bbb] The VOC emission factors are non-standard. The emission factors are derived from information found in AP-42, Section 4.3.

[ccc] Bulk terminals are defined as facilities with daily throughputs of 20,000 gallons or more.

[ddd] Bulk plants are defined as facilities with daily throughputs of 20,000 gallons or less.

[eee] These solvents are often added by the user to the inks used in printing processes. Thus, the solvent SCC's should not be used alone, but rather in conjunction with a printing process SCC.

[fff] These organic chemicals are designated in this listing by their trade names. The following list indicates the trade name and its corresponding chemical name:

Trade Name	Chemical Name
Butyl Carbitol	Diethylene Glycol Monobutyl Ether
Butyl Cellosolve	Ethylene Glycol Monobutyl Ether
Carbitol	Diethylene Glycol Monoethyl Ether
Methyl Carbitol	Diethylene Glycol Monomethyl Ether
Methyl Cellosolve	Ethylene Glycol Monoethyl Ether

APPENDIX C
SUMMARY TABLES OF STATE'S SUBMITTALS TO NEDS REQUIRING EMISSION FACTOR DEVELOPMENT

The following tables present the SCC's for which State's have submitted emissions information to NEDS and emission factor development is needed. Reports were received which required emission factor development for 293 SCC's. Of the 293 SCC's, 179 are considered legitimate source categories for which emission factors are appropriate. These SCC's are presented in Table C-1. For the remaining 114 SCC's, emission factor development is not appropriate because they are general categories which do not represent a specific process or vent. These SCC's are presented in Table C-2.

TABLE C-1. EMISSION FACTOR DEVELOPMENT FROM STATE QUICK LOOK REPORTS

SCC	PROC. DESCRIPTION	VOC	NOX	SOX	STATE
10201201	BOILER, SOLID WASTE	2.0	5.9	1.6	NC
10201301	BOILER, LIQUID WASTE	1.0	23.0	28.0	CT
10201302	BOILER, WASTE OIL	1.0	60.0	130.0	CT
10301201	BOILER, SOLID WASTE	2.0	5.9	-	NC
30101304	NITRIC ACID-CONCENTRATION	0.0	-	-	MO
30101501	VARNISH MNF. BODYING OIL	40.0	NEG	0.0	MI
30101502	VARNISH MNF. OLEORESIN	150.0	NEG	0.0	MI
30101503	VARNISH MNF. ALKYD	160.0	NEG	0.0	MI,KS,MN
30101505	VARNISH MNF. ACRYLIC	20.0	NEG	0.0	MI,KS
30101703	PHOSPHORIC ACID, ABSORBER	NEG	NEG	0.0	NC
30101704	PHOSPHORIC ACID, VENTURI SCR.	NEG	NEG	0.0	NC
30101832	PLASTICS, UREA-FORMAL. RESIN	20.0	X	0.0	MO,OR
30102301	SULFURIC ACID, ABSORBER	0.0	0.004	4.0	NC
30102308	SULFURIC ACID, ABSORBER	0.0	0.004	27.0	NC
30102321	SULFURIC ACID, STOR. TANK VNT	-	-	0.1	MO
30102401	SYN. ORGANIC FIBER, POLYAMIDE	-	NEG	NEG	TN
30103002	AMM. PHOSPHATE, AMMONIATOR, GR	NEG	NEG	0.3	KS
30103021	AMMONIUM PHOSPHATE-DEN	NEG	NEG	NEG	NC
30103102	TEREPHTHALIC ACID, REACT. VENT	30.0	0.0	0.0	NC
30103103	TEREPHTH. ACID-CRYSTALL.	3.8	0.0	0.0	NC
30103104	TEREPHTH. ACID-DISTILLATION	2.2	0.0	0.0	NC
30103105	TEREPHTH. ACID-TRANSFER VENT	3.6	0.0	0.0	NC
30103201	ELEM. SULFUR - MOD. CLAUS	3.0	0.35	280.0	DE
30103202	ELEM. SULFUR PROD. MOD. CLAUS	2.1	0.1	189.0	MI,MN
30103204	ELEM. SULFUR (REM PROC.)	2.1	0.1	4.0	MN
30103551	INORGANIC PIGMENT ORE DRYER	0.0	0.0	0.0	MN
30103553	INORGANIC PIGMENT, DRYER	0.0	0.0	0.0	MN
30112510	CHLORMETHANES- GENL.	30.0	0.0	NEG	KS
30112520	PERCH. PROD. GENL.	3.5	0.0	0.0	KS
30112701	FLUOROCARBONS-GENL.	17.1	0.0	0.0	MN
30187009	INORGAN. STOR., SULFURIC ACID	-	0.0	-	MO
30187010	INORGAN. STOR., SULFURIC ACID	-	0.0	-	MO
30200202	COFFEE ROAST. IND. FIRED ROAST	2.6	-	0.4	KS
30200203	COFFEE ROAST. STONER/COOL	NEG	-	NEG	KS
30201301	MEAT SMOKEHOUSE	-	0.7	0.1	KS,MN
30201601	SUGAR BEET PROC. DRYER	0.2	0.06	0.41	OR
30201911	VEGETABLE OIL PROD.-OIL EXTR.	17.0	NEG	NEG	KS
30202601	SEED PROD.	NEG	NEG	NEG	KS
30203601	DEEP FAT FRYING, VATS	18.5	NEG	NEG	MN
30300101	ALUM. ORE, PREBAKED RED. CELL	0.1	0.003	-	OR
30300104	ALUM. ORE ELECTRO-RED. HAND.	0.0	-	-	MO
30300306	COKE MNF. OVEN UNDERFIRING	-	0.0	-	MO
30300503	COPPER SMELT. REV. FURNACE	0.015	5.8	173.0	MI
30300504	COPPER SMELT. CONVERTER	NEG	0.0	623.0	MI
30300507	COPPER SMELT. FURNACE	0.0	10.3	320.0	MI
30300604	FERROALLOY-ELECT SMLT FURN	72.0	0.1	0.07	WV
30300814	SINTER, DISCHARGE END	0.0	NEG	NEG	IN
30300817	SINTER, COOLER	NEG	NEG	0.14	IN
30300904	STEEL PROD. ELECT ARC FURN	0.35	0.1	0.7	WV
30300908	STEEL PROD. EAF (CARBON ST)	0.35	-	0.7	CO
30300911	STEEL PROD. SOAKING PITS	0.6	NEG	NEG	CT
30300922	STEEL PROD. CONT. CASTING	-	0.05	-	CO
30300932	STEEL PROD. MACHINE SCARFING	NEG	NEG	NEG	IN,MO
30302316	TACONITE ORE PELLET TRANSF.	0.0	0.0	0.0	MN

TABLE C-1. EMISSION FACTOR DEVELOPMENT FROM STATE QUICK LOOK REPORTS (Continued)

SCC	PROC. DESCRIPTION	VOC	NOX	SOX	STATE
30400103	ALUMINUM SMELT. FURNACE	5.2	0.76	-	MI,AL
30400104	SEC. ALUMINUM-FLUXING	0.0	-	-	MO
30400109	SEC. ALUM. BURN/DRYING	32.0	0.5	3.0	MN
30400112	SEC. ALUM. ANNEALING FURN.	0.004	1.5	0.002	MN
30400208	SEC. COPPER SMELT. WIRE BURN.	0.6	1.7	12.8	KS,MO
30400224	EIF CHARGE W/ BRASS & BRONZE	NEG	NEG	0.03	MI,KS,MN
30400239	FUGITIVE CASTING OPER.	0.0	0.0	0.0	KS,MN
30400301	GRAY IRON FOUND. CUPOLA	0.18	-	-	MI,MO
30400303	GRAY IRON FOUND. EIF	NEG	NEG	0.03	GA,MI,KS
30400315	GRAY IRON FOUND.,CHARGE HAND.	NEG	NEG	NEG	MN
30400320	GRAY IRON FOUND. POUR/CAST	0.14	0.01	0.02	MI,KS,MN
30400325	GRAY IRON FOUND.,CAST COOLING	NEG	NEG	NEG	MN
30400331	GRAY IRON FOUND. CAST SHAKEOUT	1.2	0.0	0.0	MN
30400332	GRAY IRON FOUND. CAST KNOCKOUT	1.2	0.0	0.0	MI,MN
30400333	GRAY IRON FOUND. SHAKEOUT MAC.	1.2	0.0	0.0	MI
30400341	GRAY IRON FOUND. CAST. CLEANIN	0.0	0.0	0.0	MI
30400342	GRAY IRON FOUND. CAST. CLEANIN	0.0	0.0	0.0	MI
30400350	GRAY IRON FOUND., SAND GRIND/H	6.0	0.0	0.0	GA,MI,KS
30400351	GRAY IRON FOUND., CORE OVEN	0.0008	0.5	0.32	IA,KS,IA
30400352	GRAY IRON FOUND. SAND GRIND/HA	0.0	0.0	0.0	MN
30400353	GRAY IRON FOUND. CORE OVENS	0.0008	0.5	0.32	MN
30400355	GRAY IRON FOUND. SAND DRYER	0.0	1.6	0.0	MI
30400356	GRAY IRON FOUND. SAND SILO	0.0	0.0	0.0	MI
30400357	GRAY IRON FOUND. CONVEYERS	0.0	0.0	0.0	MI
30400358	GRAY IRON FOUND. SAND SCREENS	0.0	0.0	0.0	MI
30400370	GRAY IRON FOUND. SHELL CORE MA	0.0008	0.5	0.32	MI
30400371	GRAY IRON FOUND. CORE MACH.	0.0008	0.5	0.32	MI
30400403	SEC. LEAD SMELT. CUPOLA	NEG	0.1	-	OR
30400704	STEEL FOUND.-HEAT TREAT FURN.	1.1	80.0	280.0	KS,MN
30400708	STEEL FOUND.-POUR/CAST	0.14	0.01	0.02	KS
30400716	STEEL FOUND.-SAND GRIND.	0.0	0.0	0.0	KS
30400803	SEC. ZINC, POT FURNACE	2.4	1.9	0.002	MI
30400805	SEC ZINC GALVANIZ. KETTLE	0.0	0.4	0.002	MO,WV
30402201	METAL HEAT TREAT. FURNACE	0.1	4.0	0.002	MN
30402210	METAL HEAT TREAT.-QUENCH BATH	280.0	NEG	NEG	KS,MN
30500203	ASPHALTIC CONCRETE STOR. PILES	NEG	-	-	MO
30500204	ASPHALTIC CON. COLD AGG. HAND	0.13	0.0	0.12	MN
30500206	ASPHALT HEATER, NATL. GAS	-	140.0	0.6	CO
30500208	ASPHALT HEATER, DIST. OIL	0.2	20.0	144.0	CO,SC,AL
30500301	BRICK MAN. RAW MAT. DRYING	0.004	-	0.002	MI,MO
30500501	CASTABLE REFRACTORY, DRYER	0.004	1.6	0.002	GA
30500504	CASTABLE REFRACTORY, OVEN	1.0	0.016	0.0	GA
30500606	CEMENT MNF. KILNS	0.02	-	-	OR
30500802	CERAMIC CLAY MNF., GRINDING	0.0	-	-	MO
30500803	CERAMIC CLAY MNF. STORAGE	0.0	-	-	MO
30501101	CONCRETE BATCHING-GENL	0.0	0.0	-	KS
30501410	GLASS MNF. RAW MAT. HANDL.	0.0	-	0.0	KS
30501414	GLASS MNF. BEADING FURN.	0.3	8.5	5.6	MN
30501501	GYPSUM, ROTARY ORE DRYER	0.004	1.6	0.002	MI
30501502	GYPSUM, GRINDER/ROLLER MILL	0.0	0.0	0.0	MI
30501512	GYPSUM, FLASH CALCINER	0.02	2.8	8.2	MI
30501603	LIME MNF. CALCINER-VERT. KILN	0.02	2.8	8.2	MI
30501604	LIME MNF. CALCINER-ROTARY KLN	0.06	-	6.4	MI,MT
30501609	LIME MNF. HYDRATOR	0.0	-	-	MN

TABLE C-1. EMISSION FACTOR DEVELOPMENT FROM STATE QUICK LOOK REPORTS (Continued)

SCC	PROC. DESCRIPTION	VOC	NOX	SOX	STATE
30501617	LIME MNF. MULT. HEARTH CALCINE	0.02	2.[illegible]	8.2	MI
30501901	PHOSPHATE ROCK DRYING	0.004	1.6	0.002	NC
30501905	PHOSPHATE ROCK CALCINING	0.0	0.0	0.0	NC
30502012	STONE QUARRYING- DRYING	0.0	0.0	0.0	KS
30502106	SALT MINING, CONVEYING	0.0	0.0	0.0	MI
30502509	SAND/GRAVEL-COOLER	0.0	0.0	0.0	MI
30502510	SAND/GRAVEL-CRUSHING	0.0	0.0	0.0	MI
30700101	PULPING, DIGESTER	0.0	0.0	0.0	MI,MN,NC
30700102	PULPING, WASHERS/SCREENS	0.2	0.0	0.01	MI,MN
30700103	PULPING, EVAPORATOR	0.0	0.0	0.01	MI,MN,NC
30700104	PULPING, RECOVERY FURN.	1.95	-	-	MI,AL,OR,NC
30700105	PULPING, SMELT DISSOLVING TANK	0.16	2.9	0.1	MI,MN,AL,NC
30700106	PULPING, LIME KILN	0.25	-	-	MI,AL,OR,NC
30700107	PULPING, TURPENTINE CONDENSOR	0.07	-	-	MI
30700109	PULPING-LIQUOR OXID, TOWER	0.45	0.0	0.02	NC
30700110	PULPING, RECOVERY FURNACE	0.8	2.0	1.5	OR,NC
30700501	WOOD PRESSURE TREAT-CREOSOTE	NEG	-	-	MN
30700705	PLYWOOD, COE DRYER	1.0	0.3	NEG	MI
30700706	PLYWOOD, PRE-DRYER	1.0	0.3	NEG	MI
30700707	PLYWOOD, PRESSING	1.45	NEG	0.0	MI
30700708	PLYWOOD, TEMPERING	NEG	NEG	0.0	MI
30700709	PLYWOOD, BAKE OVEN	0.003	0.1	0.0	MI
30700802	SAWMILL OPER. LOG SAWING	NEG	0.0	0.0	KS
30700803	SAWMILL, SAWDUST PILE HAND	NEG	0.0	0.0	MI,KS,MN
30800501	TIRE RETREAD, BUFFING MACH.	600.0	NEG	NEG	KS
30800701	FAB. PLASTICS-MACHINING	13.0	NEG	NEG	NC
30800702	FAB. PLASTICS, MOLD RELEASE	NEG	0.0	0.0	MI
30890002	PROCESS HEATER-RES.OIL	0.28	55.0	159.0	NC
30890003	PROCESS HEATER-NATL.GAS	2.8	140.0	0.6	NC
30900303	ABRAS. CLEAN. METAL POLISHING	NEG	NEG	NEG	MI
30900304	ABRAS. CLEAN. METAL BUFFING	NEG	NEG	NEG	MI
30901001	ELECTROPLATING-GENL.	0.026	0.009	0.0	MN
30901101	CONV. COAT METAL-ALK. CLEAN. B	0.0	0.3	NEG	MN
30901102	CLEAN. METAL PARTS-PICKLING	0.0	13.0	0.6	MI,MN
30901104	CONV.COATING METAL-RINSING	100.0	8.0	NEG	MN
30901604	METAL PIPE COATING, COAL TAR	NEG	X	X	KS
30902501	DRUM CLEAN. FURNACE	0.002	-	0.002	KS
30904001	METAL DEP PROC.-METALLIZING	340.0	-	-	MN
31000202	NATL. GAS PROD.-GAS STRIPPING	-	X	310	NM
31307002	ELECT. WINDINGS REC.	190.0	0.1	2.5	NC
31401101	AUTO BODY SHREDDING	NEG	NEG	NEG	KS
31401102	AUTO BODY SHREDDING	NEG	NEG	NEG	KS
40200501	SURFACE COATING,ENAMEL	-	0.0	0.0	RI
40200701	COATING ADHESIVES APPLIC.	900.0	-	-	MN
40200710	COATING-ADHESIVES	4.4	-	-	MN
40200801	COATING OVEN, GENL.	800	54	5	TN,KS,MN,NC
40200810	COATING OVEN-GENL	42	13	1	MN
40301117	STORAGE, CRUDE OIL	0.007	-	-	MI
40301118	STORAGE, JET NAPTHA	0.056	-	-	MI
40301153	STORAGE, JET NAPTHA	31.0	-	-	MN
40400413	UNDERGROUND STOR. DIS. FUEL	NEG	-	-	MO
40400414	UNDERGROUND STOR. DIS. FUEL	NEG	-	-	MO
40500101	PRINTING/PUB.-DRYERS	2000.0	32.0	150	NC
40700809	STORAGE, ETHYL ALCOHOL	2.9	-	-	MN

TABLE C-1. EMISSION FACTOR DEVELOPMENT FROM STATE QUICK LOOK REPORTS (Continued)

SCC	PROC. DESCRIPTION	VOC	NOX	SOX	STATE
40700810	STORAGE, ETHLY ALCOHOL	0.66	-	-	MN
40701605	STORAGE,N-HEPTANE	5.8	-	-	IN
40701606	STORAGE, N-HEPTANE	1.3	-	-	IN
40701611	STORAGE, NAPTHA	0.15	-	-	IN
40701612	STORAGE, NAPTHA	0.006	-	-	IN
40701613	STORAGE, PET. DISTILLATE	0.15	-	-	IN
40701614	STORAGE, PET. DISTILLATE	0.006	-	-	IN
40703613	STORAGE, STYRENE	1.5	-	-	MN
40703614	STORAGE, STYRENE	0.17	-	-	MN
40705204	STORAGE, BUTYL CELLOSOLVE	0.03	-	-	IN
40705207	STORAGE, CELLOSOLVE	0.0036	-	-	IN
40705208	STORAGE, CELLOSOLVE	0.16	-	-	IN
40706019	STORAGE, METHYLENE CHLOR.	0.0	-	-	IN
40706020	STORAGE, METHYLENE CHLOR.	0.0	-	-	IN
40722801	STORAGE, ACETONE	2.2	-	-	IN
40722802	STORAGE, ACETONE	0.002	-	-	IN
40784801	STORAGE, ETHYLENE OXIDE	0.0	-	-	MO

TABLE C-2. SCC's FROM QUICK LOOK REPORTS FOR WHICH EMISSION FACTOR DEVELOPMENT WAS NOT APPROPRIATE

STATE	SCC	PROC. DESCRIPTION	VOC	NOX	SOX
AL	10200799	BOILER, PROCESS GAS - OTHER	X	-	-
AL	30199999	CHEM. MANF. - NEC	X	X	X
AL	30699999	NO SCC IN LISTING	X	X	-
AZ	20100401	NO SCC IN LISTING	X	X	X
CO	30609903	NO SCC IN LISTING	X	X	-
CT	30106099	PHARMACEUTICALS - NEC	X	X	X
CT	30799999	WOOD PRODUCTS - NEC	X	X	X
DE	10200799	BOILER, PROCESS GAS-OTHER	X	X	-
GA	30400399	GRAY IRON FOUND. - NEC	X	X	X
GA	30700701	PLYWOOD MANF. GENL. - NEC	-	X	X
GA	30702099	FURNITURE MANF. - NEC	X	X	X
IA	30999999	FABRICATED METALS-NEC	X	X	X
IA	40399999	NO SCC IN LISTING	X	-	-
IN	30102699	SYNTHETIC RUBBER PROD. - NEC	-	X	X
IN	40700897	STORAGE-SPECIFY ALCOHOL	X	-	-
IN	40700898	STORAGE-SPECIFY ALCOHOL	X	-	-
IN	40701697	STORAGE-SPECIFY ALKANE	X	-	-
IN	40701698	STORAGE-SPECIFY ALKANE	X	-	-
IN	40703697	STORAGE-SPECIFY AROMATIC	X	-	-
IN	40703698	STORAGE-SPECIFY AROMATIC	X	-	-
IN	40705297	STORAGE-SPEC. GLYCOL ETHER	X	-	-
IN	40705298	STORAGE-SPEC. GLYCOL ETHER	X	-	-
KS	30100799	INORGANIC CHEM., CHLORINE-NEC	X	X	X
KS	30101199	HYDROCHLORIC ACID - NEC	X	X	X
KS	30103099	AMMONIUM PHOSPHATE - NEC	X	X	X
KS	30112599	CHLORINE ORGANICS- NEC	X	X	X
KS	30188801	CHEM MNF. FUGITIVES-SPEC. PROC	X	X	X
KS	30199999	CHEM. MANF. - NEC	X	X	X
KS	30299998	FOOD & AG. NEC-SPEC. PROC.	X	X	X
KS	30299999	FOOD & AG. NEC-SPEC. PROC.	X	X	X
KS	30400199	NO SCC IN LISTING	X	X	X
KS	30405001	MISC. CAST & FABRICATING-NEC	X	X	X
KS	30700401	POULPBOARD OPERATIONS- GENL.	X	X	X
KS	30700898	SAWMILL OPER. - NEC	X	X	X
KS	30703098	WOODWORKING OPER. SPEC. IN COM	X	X	X
KS	30703099	WOODWORKING OPER. SPEC. IN COM	X	X	X
KS	30800799	FAB. PLASTICS PROD. - NEC	X	X	X
KS	31000299	NATURAL GAS PROD. - NEC	X	X	X
KS	40200998	THINNING SOLVENTS - NEC	X	-	-
KS	40301097	STORAGE-SPECIFY LIQUID	X	-	-
KS	40301099	STORAGE-SPECIFY LIQUID	X	-	-

**NEC = PROCESS NOT ELSEWHERE CLASSIFIED

TABLE C-2. SCC's FROM QUICK LOOK REPORTS FOR WHICH EMISSION FACTOR DEVELOPMENT WAS NOT APPROPRIATE (Continued)

STATE	SCC	PROC. DESCRIPTION	VOC	NOX	SOX
KS	40301299	STOR.-VAR. VAPOR SP.-SPEC. LIQ	X	-	-
MI	30101499	PAINT MANF. - NEC	X	X	X
MI	30101599	VARNISH MANF. - NEC	X	X	X
MI	30102099	PRINTING INK MANF. - NEC	X	X	X
MI	30199999	CHEM. MANF. - NEC	X	X	X
MI	30200799	NO SCC LISTED	X	X	X
MI	30299998	FOOD & AG. NEC-SPEC. PROC.	X	X	X
MI	30300599	COPPER SMELT. -NEC	X	X	X
MI	30400199	NO SCC IN LISTING	X	X	X
MI	30400204	NO SCC IN LISTING	X	X	X
MI	30400299	SEC. COPPER SMELT, FUG. NEC	X	X	X
MI	30400399	GRAY IRON FOUND. - NEC	X	X	X
MI	30400499	SEC. LEAD SMELT. - NEC	X	X	X
MI	30400899	SEC. ZINC PROD. - NEC	X	X	X
MI	30700799	PLYWOOD - NEC	X	X	X
MI	30799999	WOOD PRODUCTS - NEC	X	X	X
MI	30800799	FAB. PLASTICS PROD. - NEC	X	X	X
MI	30901098	ELECTROPLATING OPER. - NEC	X	X	X
MI	30903099	NO SCC IN LISTING	X	X	X
MI	30999999	FABRICATED METALS-NEC	X	X	X
MI	31000199	CRUDE OIL PROD. - NEC	X	X	X
MI	31000299	NATURAL GAS PROD. - NEC	X	X	X
MI	39999995	MISC INDUSTRIAL PROC. - NEC	X	X	X
MI	39999999	MISC INDUSTRIAL PROC. - NEC	X	X	X
MI	40100296	NO SCC IN LISTING	X	-	-
MI	40100297	NO SCC IN LISTING	X	-	-
MI	40100398	COLD SOLVENT CLEAN. - NEC	X	X	X
MI	40299998	MISC. ORG SOLVENT EVAP. - NEC	X	-	-
MI	40301097	STORAGE-SPECIFY LIQUID	X	-	-
MI	40301099	STORAGE-SPECIFY LIQUID	X	-	-
MI	40301197	STORAGE-SPECIFY LIQUID	X	-	-
MI	40301299	STOR.-VAR. VAPOR SP.-SPEC. LIQ	X	-	-
MI	40399999	NO SCC IN LISTING	X	-	-
MI	40600197	NO SCC IN LISTING	X	-	-
MI	40600198	NO SCC IN LISTING	X	-	-
MI	40799998	NO SCC IN LISTING	X	-	-
MI	50300701	INCINERATOR, LIQUID WASTE	X	X	-
MN	30101899	PLASTICS PRODUCTION - NEC	X	X	X
MN	30103599	INORGANIC PIGMENTS - NEC	X	X	X
MN	30187097	INORGANIC STOR. SPEC. LIQUID	X	X	X
MN	30187098	INORGANIC STOR. SPEC. LIQUID	X	X	X
MN	30188801	CHEM MNF. FUGITIVES-SPEC. PROC	X	X	X
MN	30188802	CHEM MNF. FUGITIVES-SPEC. PROC	X	-	-
MN	30199998	CHEM MANF. SPEC. IN COMM.	X	X	X
MN	30203099	DAIRY PROD. SPEC. IN COMM.	X	X	X
MN	30288801	FOOD & AG. FUG.-SPEC. PROC.	X	X	X
MN	30299998	FOOD & AG. NEC-SPEC. PROC.	X	X	X

**NEC = PROCESS NOT ELSEWHERE CLASSIFIED

TABLE C-2. SCC's FROM QUICK LOOK REPORTS FOR WHICH EMISSION FACTOR DEVELOPMENT WAS NOT APPROPRIATE (Continued)

STATE	SCC	PROC. DESCRIPTION	VOC	NOX	SOX
MN	30488801	SEC. METAL PROD. FUG.-NEC	X	X	X
MN	30501299	TEXTILE TYPE GLASS - NEC	X	-	-
MN	30700799	PLYWOOD - NEC, SPEC. IN COMM.	X	X	X
MN	30700899	SAWMILL OPER. - NEC	X	X	X
MN	30701199	PAPER COATING & GLAZING - GENL	X	X	X
MN	30701399	MISC. PAPER PROD. - NEC	X	X	X
MN	30788801	WOOD PROD. FUG. SPEC. IN COMM.	X	X	X
MN	30788802	WOOD PROD. FUG. SPEC. IN COMM.	X	X	X
MN	30800699	FAB. RUBBER PROD. - NEC	X	-	-
MN	30800799	FAB. PLASTICS PROD. - NEC	X	X	X
MN	30899999	RUBBER & PLASTICS - NEC	X	X	X
MN	30988801	FAB. METALS FUG.-SPEC. IN COMM	X	X	X
MN	32099999	LEATHER PROD. - NEC	X	X	X
MN	40188801	ORG. SOLVENT EVAP.-SPEC. IN CO	X	X	X
MN	40188802	ORG. SOLVENT EVAP.-SPEC. IN CO	X	X	X
MN	40288801	ORG. SOLVENT EVAP. FUG.- NEC	X	X	X
MN	40288802	ORG. SOLVENT EVAP. FUG.- NEC	X	X	X
MN	40299998	MISC. ORG SOLVENT EVAP. - NEC	X	-	-
MN	40301097	STORAGE-SPECIFY LIQUID	X	-	-
MN	40301099	STORAGE-SPECIFY LIQUID	X	-	-
MN	40688801	PETROLEUM MKT. FUG.-SPECIFY	X	X	X
MN	40703697	STORAGE-SPECIFY AROMATIC	X	-	-
MN	40703698	STORAGE-SPECIFY AROMATIC	X	-	-
MO	30103399	PESTICIDES - NEC	X	X	X
MO	30199999	CHEM. MANF. - NEC	X	X	X
MO	30200799	NO SCC LISTED	X	X	X
MO	30201599	SUGAR CANE PROC. - NEC	X	X	X
MO	30203299	BAKERIES - NEC	-	X	-
MO	30299999	FOOD & AG. NEC-SPEC. PROC.	X	X	X
MO	30588801	MINERAL PROD. FUG.-NEC	-	-	X
MO	30699998	NO SCC IN LISTING	X	-	-
MO	30901099	ELECTROPLATING OPER. - NEC	-	-	X
MO	39999198	NO SCC IN LISTING	-	X	-
MO	39999998	MISC INDUSTRIAL PROC. - NEC	X	-	X
MO	40299999	MISC. ORG SOLVENT EVAP. - NEC	X	-	-
MO	40300198	NO SCC IN LISTING	X	-	-
MO	40300199	NO SCC IN LISTING	X	-	-
MO	40600197	NO SCC IN LISTING	X	-	-
MO	40799997	NO SCC IN LISTING	X	-	-
MO	40799998	NO SCC IN LISTING	X	-	-
MO	50300801	TSDF-SURFACE IMPOUNDMENT	X	-	-
NC	30103199	TEREPHTHALIC ACID- NEC	X	X	X
NC	30113299	ORGANIC ACIDS PROD.-NEC	X	X	X
NC	30199999	CHEMICAL MANF.- NEC	X	X	X
NC	30700199	SULFATE PULPING- NEC	X	X	X
NC	30700799	PLYWOOD/PART.BOARD- NEC	X	X	X
NC	30700899	SAWMILL OPERATIONS- NEC	X	X	X

**NEC = PROCESS NOT ELSEWHERE CLASSIFIED

TABLE C-2. SCC's FROM QUICK LOOK REPORTS FOR WHICH EMISSION FACTOR DEVELOPMENT WAS NOT APPROPRIATE (Continued)

STATE	SCC	PROC. DESCRIPTION	VOC	NOX	SOX
NC	30702099	FURNITURE MANF. - NEC	X	X	X
NM	30600999	NO SCC IN LISTING	-	-	X
OR	30101899	PLASTICS PROD.- NEC	X	X	X
OR	30399999	PRIM. METALS IND. - NEC	X	X	-
TN	30999999	FABRICATED METALS-NEC	X	X	X
WV	30300999	STEEL PRODUCTION - NEC	X	-	-
WV	30501499	NO SCC IN LISTING	X	X	X

APPENDIX D
FUGITIVE EMISSIONS OF VOC FROM CHEMICAL UNITS

Fugitive emissions, or equipment leaks, of VOC represent a major portion of the total VOC emitted to the atmosphere from organic chemical manufacturing process units. Numerous studies have been conducted to quantify the emissions and the effect of various control techniques on emissions. An important finding of these studies is that emissions from equipment leaks are related to process complexity, as described by equipment counts. This differentiates fugitive emissions from process-related emissions which generally vary with production volume.

Through its standards development activities, EPA conducted much research in developing emission factors for the different equipment types comprising fugitive emission sources. The factors generated during these studies form the basis of the emissions estimation procedures discussed below.

Emission Factors in NAPAP Listing

In the NAPAP listing presented in this document, fugitive emission factors are presented for a limited number of organic chemical process units. The emission values are given in units of lbs/year and thus need to be handled in a special manner to yield an emissions estimate. If employing one of these listed factors, the data need to be coded with NEDS emission estimation method code 3 (emissions to be calculated by a computerized method) with a production rate of unity. This procedure enables the NEDS computer inventory program to generate the correct annual emission estimate automatically.

Emission factor estimates for fugitive emissions appear in this NAPAP listing for fourteen process units: vinyl acetate, ethylene, cumene, acetone/phenol, ethylene dichloride, vinyl chloride (monomer), formaldehyde, methyl ethyl ketone, acetaldehyde, methylmethacrylate, adipic acid, trichloroethylene/perchloroethylene, 1,1,1-trichloroethane, and acrylonitrile. The estimates are based on average equipment counts for the

Preceding page blank

associated process units included in the 24-unit study of SOCMI process units (EPA-600/2-81-003). These average equipment counts were combined with the average emission factors for individual equipment components published in the Additional Information Document (AID) (EPA-450/3-82-010) to yield an estimate of annual emissions (assuming 8,760 hours of operation).

These emission estimates are average values based upon limited equipment count data. They represent an approximation only and should, therefore, be used with some caution. More accurate estimates of fugitive emissions can be generated using the following procedures.

Estimates Using the AID

The AID contains background information on the development of the emission factors for equipment leaks in chemical process units. In Appendix B of that document, the procedure for estimating total fugitive emissions from a process unit is presented. That procedure, which uses specific equipment counts for each equipment type and service, can also be used to provide a more accurate estimate of fugitive emissions for any given process unit.

As illustrated in Table D-1, the estimation technique is founded in the specific equipment counts for the process unit of interest. As shown for this example, the number of sources are grouped by equipment type (pump seal, valve, etc.) and service (gas, light liquid, heavy liquid). The individual component emission factors are provided in the table in terms of lb/hr/source. These are the SOCMI average emission factors that are applicable to the industry overall, in the absence of unit-specific emission factors (see below). The annual emissions estimate for each equipment type and service is merely the product of the number of components and the individual component emission factor, applied over the number of hours of operation annually. In the example in Table D-1, one operating year was taken to be 8,760 hours. The total of fugitive emissions is then estimated as the sum of the estimates by equipment type and service.

This approach yields an estimate of fugitive emissions that is more specific to the process unit of interest. Emissions can be even more closely estimated provided certain additional data are gathered for the

TABLE D-1. EXAMPLE OF EMISSIONS ESTIMATE USING THE AID APPROACH

Emissions Source	Number of Sources	Emission Factor lb/hr/source	Annual Emissions lbs/yr[a]
Pump seals			
Light Liquid	29	0.1087	27,600
Heavy Liquid	30	0.0471	12,800
Valves			
Gas	402	0.0123	43,400
Light Liquid	524	0.0154	70,700
Heavy Liquid	524	0.00051	2,300
Safety/relief valves			
Gas	11	0.229	22,000
Open-ended lines	410	0.0037	13,400
Compressors	2	0.502	8,800
Sampling connections	26	0.0330	7,500
Flanges	2400	0.0018	38,400
TOTAL			246,900

---

[a] For estimating purposes, one operating year was assumed to be 8,760 hours.

specific process unit. These data require that a rigorous Method 21 survey be conducted in the process unit to determine the number of sources leaking and the number not leaking according to a given leak definition. This final procedure, which is an extension of the AID procedure described above, is detailed in a report on estimating emissions from equipment leaks of VOC and hazardous air pollutants (HAP's) published in 1986 by EPA.

APPENDIX E

SUMMARY TABLES OF CHANGES TO THE SCC LISTING SINCE OCTOBER 1985

The following tables present the changes to the SCC listing since the October 1985 Report was released. These changes reflect recommendations from State agencies, the U. S. Environmental Protection Agency (EPA), and Radian Corporation. All SCC's shown as deleted from this listing have been retained in the NEDS computerized data base and can be accessed for historical records. However, they will be suppressed from future printed listings. More information about additions or deletions of SCC's to NEDS can be obtained from the U. S. EPA's Office of Air Quality, Planning and Standards (OAQPS).

TABLE E-1. CHANGES TO THE SCC LISTING SINCE THE 1985 NEDS REPORT

ACTION	SCC	DESCRIPTION	PREVIOUS UNITS	RECOMMENDED UNITS
CHANGE UNITS	301***80	CHEMICAL MANF.-FUGITIVES	LBS/YEAR	PROCESS UNIT-YEAR
CHANGE UNITS	40200101	SURFACE COATING: PAINT	TONS COAT. APPLIED	TONS COAT. MIX APPLIED
CHANGE UNITS	40200201	SURFACE COATING: PAINT	TONS COAT. APPLIED	TONS COAT. MIX APPLIED
CHANGE UNITS	40200301	SURFACE COATING: VARNISH	TONS COAT. APPLIED	TONS COAT. MIX APPLIED
CHANGE UNITS	40200401	SURFACE COATING: LACQUER	TONS COAT. APPLIED	TONS COAT. MIX APPLIED
CHANGE UNITS	40200501	SURFACE COATING: ENAMEL	TONS COAT. APPLIED	TONS COAT. MIX APPLIED
CHANGE UNITS	40200601	SURFACE COATING: PRIMER	TONS COAT. APPLIED	TONS COAT. MIX APPLIED
CHANGE UNITS	40200701	SURFACE COATING: ADHESIVE	TONS COAT. APPLIED	TONS COAT. MIX APPLIED
CHANGE UNITS	40200898	COATING OVEN-GENERAL	10^3 FEET	10^3 FEET OF OVEN
CHANGE UNITS	50300801	TSDF-SURFACE IMPOUND.	LBS/YEAR	10^3 GAL THRUPUT
CHANGE UNITS	50300810	TSDF-WASTE PILES	LBS/YEAR	ACRE OF STORAGE PILES
CHANGE UNITS	50300820	TSDF-LAND TREATMENT	LBS/YEAR	ACRE
CHANGE UNITS	50300830	TSDF-CONTAINERS	LBS/YEAR	10^3 CONTAINERS STORED

ACTION	SCC	DESCRIPTION	REASON FOR CHANGE
DELETE SCC*	***900**	OIL FIRED FLARES	NO LONGER USED IN THE U.S.
DELETE SCC	30201914	VEGE. OIL-FUGITIVES	REPLACED BY NEW SCC
DELETE SCC	30201915	VEGE. OIL- SOLVENT STORAGE	REPLACED BY NEW SCC
DELETE SCC	30901601	METAL PIPE COAT.-ASPHALT DIP	REPLACED BY NEW SCC
DELETE SCC	30901602	METAL PIPE COAT.-PIPE SPINNING	REPLACED BY NEW SCC
DELETE SCC	30901603	METAL PIPE COAT.-PIPE WRAPPING	REPLACED BY NEW SCC
DELETE SCC	33000201	RUBBERIZED FABRIC-IMPREGNATION	REPLACED BY NEW SCC
DELETE SCC	33000202	RUBBERIZED FABRIC-WET COATING	REPLACED BY NEW SCC
DELETE SCC	33000203	RUBBERIZED FABRIC-HOT MELT COAT.	REPLACED BY NEW SCC
DELETE SCC	40701607	FIXED ROOF STOR. ISOPENTANE	MUST BE STORED IN PRESSURE TANKS
DELETE SCC	40701608	FIXED ROOF STOR. ISOPENTANE	MUST BE STORED IN PRESSURE TANKS
DELETE SCC	40717201	FLOAT ROOF STOR. ACETALDEHYDE	MUST BE STORED IN PRESSURE TANKS
DELETE SCC	40717202	FLOAT ROOF STOR. ACETALDEHYDE	MUST BE STORED IN PRESSURE TANKS
DELETE SCC	40717203	FLOAT. ROOF STOR. ACROLEIN	MUST BE STORED IN PRESSURE TANKS
DELETE SCC	40717204	FLOAT. ROOF STOR. ACROLEIN	MUST BE STORED IN PRESSURE TANKS
DELETE SCC	40717605	FLOAT. ROOF STOR. N-PENTANE	MUST BE STORED IN PRESSURE TANKS
DELETE SCC	40717606	FLOAT. ROOF STOR. N-PENTANE	MUST BE STORED IN PRESSURE TANKS
DELETE SCC	40718001	FLOAT. ROOF STOR. ISOPRENE	MUST BE STORED IN PRESSURE TANKS
DELETE SCC	40718002	FLOAT. ROOF STOR. ISOPRENE	MUST BE STORED IN PRESSURE TANKS
DELETE SCC	40718003	FLOAT ROOF STOR. METHYLALLENE	MUST BE STORED IN PRESSURE TANKS
DELETE SCC	40718004	FLOAT ROOF STOR. METHYLALLENE	MUST BE STORED IN PRESSURE TANKS
DELETE SCC	40718005	FLOAT. ROOF STOR. 1-PENTENE	MUST BE STORED IN PRESSURE TANKS
DELETE SCC	40718006	FLOAT. ROOF STOR. 1-PENTENE	MUST BE STORED IN PRESSURE TANKS
DELETE SCC	40718007	FLOAT. ROOF STOR. PIPERYLENE	MUST BE STORED IN PRESSURE TANKS
DELETE SCC	40718008	FLOAT. ROOF STOR. PIPERYLENE	MUST BE STORED IN PRESSURE TANKS
DELETE SCC	40718009	FLOAT ROOF STOR. CYCLOPENTENE	MUST BE STORED IN PRESSURE TANKS
DELETE SCC	40718010	FLOAT ROOF STOR. CYCLOPENTENE	MUST BE STORED IN PRESSURE TANKS
DELETE SCC	40718097	FLOAT. ROOF STOR. OTHER ALKENES	MUST BE STORED IN PRESSURE TANKS
DELETE SCC	40718098	FLOAT. ROOF STOR. OTHER ALKENES	MUST BE STORED IN PRESSURE TANKS

TABLE E-1. CHANGES TO THE SCC LISTING SINCE THE 1985 NEDS REPORT (Continued)

ACTION	SCC	DESCRIPTION	UNITS
ADD SCC	10200213	EXT. COMBUSTION-WET SLURRY	TONS BURNED
ADD SCC	20100702	COMBUSTION-PROCESS GAS, RECIP.	10 CUBIC FEET BURNED
ADD SCC	30101849	PLASTICS PROD-ABS RESIN	TONS PRODUCED
ADD SCC	30101870	POLYETHER RESIN PROD.-REACTOR	TONS PRODUCT
ADD SCC	30101871	POLYETHER RESIN PROD.-BLOW. FREON	TONS PRODUCT
ADD SCC	30101872	POLYETHER RESIN PROD.-MISCELL.	TONS PRODUCT
ADD SCC	30101880	POLYURETHANE-REACTOR	TONS PRODUCT
ADD SCC	30101881	POLYURETHANE-BLOWING AGENT-FREON	TONS AGENT USED
ADD SCC	30101882	POLYURETHANE-BLOWING AGENT-MC	TONS AGENT USED
ADD SCC	30101883	POLYURETHANE-TRANS/CONVEY/STORAGE	TONS PRODUCT
ADD SCC	30101884	POLYURETHANE-PACKAGING/SHIPPING	TONS PRODUCT
ADD SCC	30101885	POLYURETHANE-SPECIFY IN COMMENTS	TONS PRODUCT
ADD SCC	30103311	AGRIC. PESTICIDE PROD. GENL.	GALLONS STORED
ADD SCC	30103312	AGRIC. PESTICIDE PROD. GENL.	POUNDS STORED
ADD SCC	30106011	PHARMACEUTICALS-COATING PROC.	TONS SOLVENT IN COATING
ADD SCC	30106012	PHARMACEUTICALS-GRANULATION PROC.	TONS SOLVENT CONSUMED
ADD SCC	30111201	ELEMENTAL PHOSPHORUS-CALCINER	TONS PROCESSED
ADD SCC	30112202	ELEMENTAL PHOSPHORUS-FURNACE	TONS PROCESSED
ADD SCC	30112299	ELEMENTAL PHOSPHORUS-SPEC. IN COM.	TONS PRODUCT
ADD SCC	30112720	FLUOROCARBONS PROD. CF 12/11	TONS PRODUCED
ADD SCC	30112730	FLUOROCARBONS PROD. CF 23/22	TONS PRODUCED
ADD SCC	30112740	FLUOROCARBONS PROD. CF 113/114	TONS PRODUCED
ADD SCC	30113701	ESTERS PROD.-ETHYL ACRYLATE	TONS PRODUCED
ADD SCC	30113710	ESTERS PROD.-BUTYL ACRYLATE	TONS PRODUCED
ADD SCC	30200512	GRAIN PROC. COUNTRY ELEVATORS	TONS GRAIN SHIPPED OR RECVD.
ADD SCC	30200611	GRAIN PROC. COUNTRY ELEVATORS	TONS GRAIN SHIPPED OR RECVD.
ADD SCC	30201906	VEGE. OIL PROD.-CORN OIL	TONS EXTRACTOR FEEDCAKE
ADD SCC	30201907	VEGE. OIL PROD.-COTTONSEED OIL	TONS EXTRACTOR FEEDCAKE
ADD SCC	30201908	VEGE. OIL PROD.-SOYBEAN OIL	TONS EXTRACTOR FEEDCAKE
ADD SCC	30201909	VEGE. OIL PROD.-PEANUT OIL	TONS EXTRACTOR FEEDCAKE
ADD SCC	30201916	VEGE. OIL PROD.-OIL EXTRACTION	TONS EXTRACTOR FEEDCAKE
ADD SCC	30201917	VEGE. OIL PROD.-MEAL PREPARATION	TONS EXTRACTOR FEEDCAKE
ADD SCC	30201918	VEGE. OIL PROD.-OIL REFINING	TONS EXTRACTOR FEEDCAKE
ADD SCC	30201919	VEGE. OIL PROD.-FUGITIVES	TONS EXTRACTOR FEEDCAKE
ADD SCC	30201920	VEGE. OIL PROD.-SOLVENT STORAGE	TONS RAW SEED PROCESSED
ADD SCC	30202101	POULTRY PROD.-MANURE HAND./DRY	NUMBER OF CHICKENS CAPACITY
ADD SCC	30202102	POULTRY PROD.-MANURE HAND./DRY	NUMBER OF CHICKENS THRUPUT
ADD SCC	30202105	POULTRY PROD.-MANURE HAND./WET	NUMBER OF CHICKENS CAPACITY
ADD SCC	30202106	POULTRY PROD.-MANURE HAND./WET	NUMBER OF CHICKENS THRUPUT
ADD SCC	30203801	ANIMAL/POULTRY RENDERING-GENL	TONS PROCESSED
ADD SCC	30300211	RUBBERIZED FABRIC-IMPREGNATION	TONS COATING APPLIED
ADD SCC	30300212	RUBBERIZED FABRIC-WET COATING	TONS COATING APPLIED
ADD SCC	30300213	RUBBERIZED FABRIC-HOT MELT COATING	TONS COATING APPLIED
ADD SCC	30300214	RUBBERIZED FABRIC-WET COAT MIXING	TONS COATING APPLIED
ADD SCC	30400114	SEC, ALUMINUM-POUR & CASTING	TONS METAL CHARGED
ADD SCC	30400513	LEAD BATTERY MANF.-BARTON PROCESS	TONS PROCESSED
ADD SCC	30400521	LEAD BATTERY MANF.-OVERALL PROCESS	TONS PROCESSED
ADD SCC	30400522	LEAD BATTERY MANF.-GRID CASTING	TONS PROCESSED
ADD SCC	30400523	LEAD BATTERY MANF.-PASTE MIXING	TONS PROCESSED

TABLE E-1. CHANGES TO THE SCC LISTING SINCE THE 1985 NEDS REPORT (Continued)

ACTION	SCC	DESCRIPTION	UNITS
ADD SCC	30400524	LEAD BATTERY MANF.-LEAD OXIDE MILL	TONS PROCESSED
ADD SCC	30400525	LEAD BATTERY MANF.-STACK/PB BURN	TONS PROCESSED
ADD SCC	30400526	LEAD BATTERY MANF.-RECLAIMING FURN.	TONS PROCESSED
ADD SCC	30400527	LEAD BATTERY MANF.-SML. PARTS CAST	TONS PROCESSED
ADD SCC	30400528	LEAD BATTERY MANF.-FORMATION	TONS PROCESSED
ADD SCC	30401002	NICKEL PROD.-MIX/BLEND/GRIND	TONS PROCESSED
ADD SCC	30401004	NICKEL PROD.-HEAT TREAT. FURN.	TONS PROCESSED
ADD SCC	30401005	NICKEL PROD.-INDUCTION FURN.(IN)	TONS PROCESSED
ADD SCC	30401006	NICKEL PROD.-INDUCTION FURN.(VAC)	TONS PROCESSED
ADD SCC	30401007	NICKEL PROD.-EAF W/ CARBON ELECT.	TONS PROCESSED
ADD SCC	30401008	NICKEL PROD.-EAF	TONS PROCESSED
ADD SCC	30401010	NICKEL PROD.-FININSHING: PICKLING	TONS PROCESSED
ADD SCC	30401011	NICKEL PROD.-FINISHING: GRINDING	TONS PROCESSED
ADD SCC	30515001	CALCINING-RAW MATERIAL HAND.	TONS THROUGHPUT
ADD SCC	30515002	CALCINING-GENERAL	TONS THROUGHPUT
ADD SCC	30515003	CALCINING-GRINDING/MILLING	TONS THROUGHPUT
ADD SCC	30515004	CALCINING-FINISHED PROD. HAND.	TONS THROUGHPUT
ADD SCC	30515005	CALCINING-MIXING	TONS THROUGHPUT
ADD SCC	30901097	ELECTROPLATING-SPEC. IN COMM.	TONS MAKEUP
ADD SCC	30901605	METAL PIPE COATING-ASPHALT DIPPING	10^3 SQ FT PIPE PROCESSED
ADD SCC	30901606	METAL PIPE COATING-PIPE SPINNING	10^3 SQ FT PIPE PROCESSED
ADD SCC	30901607	METAL PIPE COATING-PIPE WRAPPING	10^3 SQ FT PIPE PROCESSED
ADD SCC	30903005	MACHINING OPER.-SAWING, SPEC. MAT.	TONS PROCESSED
ADD SCC	30903006	MACHINING OPER.-HONING, SPEC. MAT.	TONS PROCESSED
ADD SCC	31000207	NATL. GAS PROD.-VALVES (FUGITIVES)	PROCESS UNIT/YR
ADD SCC	39999993	MISC. INDUSTRIAL PROCESSES	PARTS PROCESSED
ADD SCC	39999994	MISC. INDUSTRIAL PROCESSES	POUNDS PROCESSED
ADD SCC	40100208	VAPOR DEGREASING-CHLOROSOLVE	TONS SOLVENT USED
ADD SCC	40100227	THIN. SOLVENT-HEXYLENE GLYCOL	TONS SOLVENT USED
ADD SCC	40100228	THIN. SOLVENT-ETHYLENE OXIDE	TONS SOLVENT USED
ADD SCC	40299995	SURFACE COATING-SPECIFY IN COMM.	TONS SOLVENT IN COATING
ADD SCC	40299996	SURFACE COATING-SPECIFY IN COMM.	TONS SOLVENT
ADD SCC	40500413	LITHOGRAPHIC-ISOPROPYL ALCOHOL	TON SOLVENT USED
ADD SCC	40704421	FIXED ROOF STOR.-N-PROPYL ACETATE	10^3 GAL. STOR. CAPACITY
ADD SCC	40704422	FIXED ROOF STOR.-N-PROPYL ACETATE	10^3 GAL. THROUGHPUT
ADD SCC	40704423	FIXED RF. STOR.-i-BUTYL-i-BUTYRATE	10^3 GAL. STOR. CAPACITY
ADD SCC	40704424	FIXED RF. STOR.-i-BUTYL-i-BUTYRATE	10^3 GAL. THROUGHPUT
ADD SCC	40706813	FIXED ROOF STOR.-METHYLAMYL KETONE	10^3 GAL. STOR. CAPACITY
ADD SCC	40706814	FIXED ROOF STOR.-METHYLAMYL KETONE	10^3 GAL. THROUGHPUT
ADD SCC	40781201	PRESSURE TANKS - ACETALDEHYDE	1000 GALLONS THROUGHPUT
ADD SCC	40781202	PRESSURE TANKS - ACROLEIN	1000 GALLONS THROUGHPUT
ADD SCC	40781606	PRESSURE TANKS - ISOPENTANE	1000 GALLONS THROUGHPUT
ADD SCC	40781607	PRESSURE TANKS - N-PENTANE	1000 GALLONS THROUGHPUT
ADD SCC	40782007	PRESSURE TANKS - ISOPRENE	1000 GALLONS THROUGHPUT
ADD SCC	40782008	PRESSURE TANKS - METHYLALLENE	1000 GALLONS THROUGHPUT
ADD SCC	40782009	PRESSURE TANKS - 1-PENTENE	1000 GALLONS THROUGHPUT
ADD SCC	40782010	PRESSURE TANKS - PIPERYLENE	1000 GALLONS THROUGHPUT
ADD SCC	40782011	PRESSURE TANKS - CYCLOPENTENE	1000 GALLONS THROUGHPUT
ADD SCC	40799997	MISC. ORGANIC CHEMICAL STORAGE	10 GAL. STORAGE CAPACITY

TABLE E-1. CHANGES TO THE SCC LISTING SINCE THE 1985 NEDS REPORT (Continued)

ACTION	SCC	DESCRIPTION	UNITS
ADD SCC	40799998	MISC. ORGANIC CHEMICAL STORAGE	10^3 GAL. TRANSFERRED
ADD SCC	40899995	ORG. CHEM. TRANS.-CARS/TRUCKS	10^3 GAL. TRANSFERRED
ADD SCC	40899997	ORG. CHEM. TRANS.-MARINE VESSELS	10^3 GAL. TRANSFERRED
ADD SCC	50200901	ASBESTOS REMOVAL-GENERAL	TONS WASTE REMOVED
ADD SCC	50300901	ASBESTOS REMOVAL-GENERAL	TONS WASTE REMOVED